

# MILITARY REVIEW



COMMAND AND GENERAL STAFF COLLEGE  
FORT LEAVENWORTH, KANSAS

AUGUST 1956

VOLUME XXXVI

NUMBER 5



# COMMAND AND GENERAL STAFF COLLEGE

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The printing of this publication has been approved by  
the Director of the Bureau of the Budget 2 July 1953.

MILITARY REVIEW—Published monthly by the Command and General Staff College at Fort Leavenworth, Kansas, in the English, Spanish, and Portuguese languages. Entered as second-class matter August 31, 1934 at the Post Office at Fort Leavenworth, Kansas, under the Act of March 3, 1879. Subscription rates: \$3.50 (US currency) a year in the United States, United States military post offices, and those countries which are members of the Pan-American Postal Union (including Spain): \$4.50 a year in all other countries.

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# Ground Forces--Key to Survival

Lieutenant Colonel Carl A. Peterson, *Infantry*  
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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

CALL it by any name you wish—international communism, the Communist conspiracy, Soviet imperialism—we are faced with a strong, aggressive force that has both a desire and a plan to swallow the rest of the world. Outward evidence of Soviet intentions will sometimes be crystal clear and sometimes heavily veiled. The veils do not alter the intentions—we are in the middle of a life and death struggle. Sometimes the enemy action is creeping slowly as in the form of inciting and arming the Arab world; sometimes it is bold and swift as in Czechoslovakia and Korea. Always it pushes forward except when and where it meets resistance.

Should political and economic measures fail, what type of military resistance is necessary? Is firepower sufficient? We have tremendous firepower and the means to deliver it. What do we want to do with it? Do we want to trade nuclear blows with the enemy until a decision is reached? That is the impression gained from what we hear and read; it is the concept of a pushbutton war. Is this the quick and easy way? Is this the way of certain victory? No one can say for it has not been tested. Sober reflection indicates that such a con-

cept would eventually commit us to an intercontinental nuclear artillery duel ending only when one side is erased for all practical purposes and the "winner" scarcely better off. One can visualize the survivors on both sides fighting like wild animals for scraps of decaying food.

We cannot give up and let the Communists take over as we would be just as badly off. It would be better for mankind to go back to the Dark Ages and start afresh in his climb for something better.

## Power in Being

There is a solution. It is found in having power in being that will deter war or, if war is started by reckless and miscalculating men, will defeat and control the enemy without destroying the world. This power must have the characteristics of application to the right spot in just the right doses to achieve the exact results desired.

If the Communists move into West Germany or Turkey, for example, we can inflict terrific damage on the Communist homeland with our nuclear weapons, but we cannot maintain the neutralization achieved unless we control the enemy government. We must control it physically. Control by the sea or by the air is transitory, but only on the ground is it lasting and certain. We need a ground force to follow immediately the shock action of the nuclear firepower. We need a field army which is not tied down to specific

*We must have power in being available at all times that will deter war or, if a war should be started by reckless and miscalculating men, will defeat and control the enemy without destroying the entire world*

area missions but which is available and can be quickly transported to any area of the world, including the enemy heartland, and be sustained in combat for an indefinite period.

Such a strategic Army striking force, in coordination with the sister services, could make victory of some value if global war is forced on us. In addition, it would act as a deterrent to both global and small wars and make the victorious and expeditious halting of a small war as much of a certainty as can be found in these times.

What is needed to obtain the required strategic striking force? We are short men, money, matériel, mobility, and maybe motivation. We need divisions and we need the ability to move those divisions at an atomic era speed. They must have the capability of being moved expeditiously over long distances to the battlefield and also the capability of rapid movement on the battlefield.

#### For Mobility and Survival

Perhaps a few thoughts would be in order on the requirements to make the Army more mobile and allow it to live on the nuclear battlefield.

First, we need more reconnaissance units with greater range, greater cross-country mobility, and sufficient fighting power to obtain information, screen less mobile units, seize key points, and patrol large areas. To obtain reconnaissance

units with sufficient mobility differential over the remaining land forces to carry out the traditional cavalry roles, we must have a family of lightly armored cross-country vehicles and aircraft.

Second, we need to get more out of the individual soldier on foot in the way of speed, endurance, and sustained effort. This can be done by lightening the load on the individual, by fewer types of weapons and other equipment, by additional light radio equipment to be used by the squad leader and even by the individual soldier, by using lightly armored vehicles to deliver the soldier and his supplies to the fighting area, and by using helicopters and other aircraft to save his feet and his back. These are some of the ways to conserve the energy of the soldier so that the maximum may be used in fighting the enemy; also it may result in more soldiers available to fight and fewer handling supplies.

Third, we can gain mobility by increasing the range of firepower and decreasing the weight of the ammunition. Some range increases can be made in conventional artillery but the real progress is through guided missiles. Atomic artillery is the answer to the problem of decreasing the weight of ammunition by several hundred tons per division per day of active combat. It is generally agreed that the 280-mm gun is not the final answer; continued improvement is necessary.

Fourth, our operations outside the continental United States must not be dependent on major ports as it is likely that such ports will cease to exist if we try to use them. Such operations would require logistic support both by air and by the use of many small ports and beaches. Although we have the devices to operate without using major ports, we need these devices in greater quantity.

Fifth, we need more trained manpower and a longer period of service. Inept or untrained men will immobilize the best

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equipment. Our units must be professionally competent.

Finally, air transport is the key to both the tactical and the strategic mobility of the Army. It is difficult for the Army to obtain aircraft or the use of aircraft; as long as the Army is dependent on the priority whims of other services for the means to make it effective it will be without the needed effectiveness. Lack of adequate funds and unrealistic interservice priorities are hamstringing the Army.

#### Public Understanding

To get more money, matériel, and men for the Army requires a complete understanding by the public for the need. The economy could sustain the extra effort but it would be unpalatable. It might mean more work per week and more taxes for everyone.

A field army of 15 divisions would require approximately 600,000 additional men which would cost approximately 33 billion dollars a year. Perhaps a more realistic initial effort would be the addition of a corps of 5 divisions which would require approximately 150,000 men and cost approximately 800 million dollars per year.

This brings us to motivation. Once the need is understood the effort would be forthcoming for, as history reveals, neither the American people nor the Congress have failed to supply the wherewithal once the need became apparent. Habitually in the past the United States has been unprepared when faced with war; there has been a lack of understanding and feeling of the need for the Army until the need became startlingly apparent. Clearer and more complete explanation is required than has been attained in the past.

Each officer should understand this problem and be sure that the people under him are aware of it. The Information and Education Program can be more meaningful, especially to the officers and men who are brought into the Army by the processes of the Selective Service System. They have a right to know and through them the Congress and the public can be informed. In the final analysis we obtain our Army from the people through the Congress.

Perhaps the people would like to pay a little more and expend an additional effort to be saved from an interminable intercontinental nuclear artillery duel.

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I believe the Army is an indispensable component of our national security. Nothing has occurred on the world scene that diminishes the fundamental role of land forces. By that I do not mean that the weapons and tactics of warfare have not changed, but they have always been in process of change and will continue to do so. But the ability to take and hold ground, and control people who live on the ground, remains a major factor in a nation's power. When it comes to military forces, nothing has appeared that can act as a substitute, or guarantee to do the job of soldiers. A look at the realities of life today will demonstrate that land forces are a prime element in any nation's security structure.

*Secretary of the Army Wilber M. Brucker*

# Combat Support Coordination

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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**I**N THIS day of more complex weapons of war that have greater range in terms of miles forward of the line of contact, some ONE agency must be designated to coordinate their combat support activities. It is proposed that a *combat support coordination center* be organized for this purpose. Even though the operating agencies that provide support to frontline elements operate in reasonably close proximity to those frontlines, their control is often centralized at a higher level.

The terms "weapons of war" and "combat support" as used here need definition whereby we may establish the limits which are being considered. In using the term "weapons of war," it is intended to depart beyond strictly "hardware" categories to include some of the more abstract, but equally potent, weapons. Included within this group of more abstract applications are psychological warfare, combat deception planning, cover plan operations, and guerrilla (partisan) operations. This is by no means a complete list, but typifies those activities that have been placed in this "self-labeled" abstract area. These can be assessed as "combat support" activities in every sense although it may be difficult to measure their results in such tangible terms as numbers of casualties, positions taken or held, or numbers of pieces of equipment destroyed.

Whether or not the classification of all of these diverse activities into a "combat support" category is accepted, there can be little disagreement in two facts: namely, they do support combat operations and although their specific techniques vary widely, they must be closely coordinated to assist in achievement of the common goal. To accomplish this latter purpose the combat support coordination organization is proposed. It is only logical that when *all* of these "weapons of war" are used to support the same purpose, all must be welded together to support the plan of operation and to complement the employment of those weapons that by their nature can produce concrete, "countable" results.

As we seek an organization to accomplish this coordination it is logical that we turn to the existent fire support coordination center (FSCC). Training Circular 9 published in 1953 states, "Fire Support Coordination is the technique of planning, coordinating, and integrating the fires of *all weapons* of the Army, Navy, and Air Force employed in the support of ground combat operations." This obviously pertains to weapons we consider in the "hardware" sense only.

To go further within the training circular, it states that "the coordination of fire support is a command responsibility." In the case of the FSCC the senior artillery officer is designated to be the coordinator, and properly so, when we are dealing with means for "actively" supporting combat operations. In the case of the definitions quoted from the current training circular governing fire support

coordination, if the term "fire support" is deleted and the term "combat support" inserted, a complete frame of reference and a suitable charter is established upon which to build.

### Suitable Mission

To provide a mission suitable to this agency, we can again paraphrase a definition from Training Circular 9:

*The Combat Support Coordination Center, as an operating agency of the force commander, will be composed of representatives of the general and special staff and of combat support agencies who will work together to plan and coordinate their activities in the conduct of combat operations.*

What can we expect from this agency being proposed? It is only logical to expect that it will provide coordinated plans of action employing together each of the combat support activities to the maximum extent practicable to complement the maneuver.

To realistically set forth the *modus operandi* of this agency of the commander, it is necessary to establish a tactical situation upon which we can hypothetically superimpose this organization and visualize how it should operate:

During the months of November and December the First Army had been conducting a series of limited objective at-

tack, "to be a major allied effort. All existing facilities, agencies, and means are to be employed within existent national policy to deliver a final blow on the enemy forces."

Based upon this brief situation it is necessary to recount some of the "facilities, agencies, and means" available to First Army:

The major combat elements of First Army consist of five armored divisions, six infantry divisions, and three regiments of armored cavalry. Also available are artillery units capable of delivering atomic artillery projectiles and rockets and two guided missile units capable of delivering guided missiles with atomic warheads. Service organizations capable of providing adequate logistic and administrative support are available. Among the other units and agencies available are signal units capable of conducting electronic warfare, psychological warfare units, and an organized partisan force operating forward of the line of contact of First Army. (Although there are many more units within First Army only those of significance to this discussion are mentioned here.)

With such a large force that has many diverse activities the problem of employment of all "facilities, agencies, and means" to achieve a common goal is an extremely difficult task. To accomplish

***The employment of the many diverse and abstract weapons of war can be meshed together with those of long standing to assure maximum utilization of all of the means to lend effective support to combat units***

tacks for the twofold purpose of battering present defensive positions and gaining better positions from which to launch an army offensive tentatively scheduled for 3 January. Detailed plans are being prepared for this offensive action which is, to quote the letter of in-

this purpose the "Combat Support Center" First Army was organized. As the army commander explained when it was created:

Its purpose is to assure that the partisans and clandestine agencies collect the proper information and impede en-

emy activities at the proper points; that electronic warfare means are employed at the most effective times and places and do not adversely affect our own forces in so doing; that fire support means are brought to bear at most advantageous points, atomic targets are properly assessed and evaluated, and that friendly partisan forces are not obliterated in the conduct of the operation; that psychological warfare means are employed utilizing the most effective and meaningful theme; in short, that the combat support means of First Army are employed and in the most effective manner to assist the combat forces in achieving their assigned missions.

Now, let us focus our attention upon the basic *who, where, when, and how* of this organization, since we have established the *why* and *what* in general terms.

Based on the stated purpose of the coordination center, the *who* is obvious. Representatives of each of those agencies who are the operators of these support activities should be present together with certain representatives of the general and special staff sections charged with supervising their activities. For any military organization of fixed or temporary design to be effective, someone must be the chief. Although each agency participating has

an interest, no one has a more vital one than the army G3; *not even the First Army artillery officer*. A senior representative of G3 must provide the impetus, control, guidance, encouragement, and even admonition necessary to produce worthwhile results.

### Wide Representation

The army G2 must always have representatives available to this agency who can provide factual information on the enemy situation, serve as liaison for intelligence agencies, be ever ready to turn general intelligence requirements into specific orders and requests, and be fully cognizant of current and projected cover operations. The army artillery officer should be represented at all times by officers who have detailed knowledge of the artillery situation, antiaircraft capabilities, and capabilities and limitations of the army atomic delivery means.

Representing the army signal officer must be those who are intimately familiar with the capabilities and limitations of the First Army signal communication and electronic systems. Others present habitually should include Air Force representatives; an army aviation representative who can speak authoritatively on both fixed- and rotary-wing aircraft and the current First Army capabilities in this field; an officer thoroughly capable of advising as to all aspects of psychological warfare; and a chemical officer familiar with the capability for employment of chemical agents, defense against such agents, smoke, biological agents, and radiological agent capabilities. On call to this group must be a capable weather advisor who can provide up-to-date forecasts, both long-range and short-term estimates.

As First Army developed other combat capabilities through the addition of new means or skills it would be necessary to consider each new means on its own merit to determine whether a representative

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would be necessary. This is by no means a complete list but in this type of activity care must be exercised to avoid the "chambers being packed," for it becomes one of those activities in which everyone desires to participate. It should be understood that in the creation of this agency many specialists may be used or called upon for advice or assistance; however, they would not need to be "members-at-large." Included in such a group of consultants would be photo interpreters, area specialists, electronic experts, and civil affairs-military government personnel.

Having examined the *who* of this agency, next to be considered is the *where*. This activity must be an immediate adjunct of First Army headquarters and should be conveniently located as part of the First Army tactical or forward command post. It must be governed by rigid security provisions, and have communication facilities to include facsimile, telephone, wire, radio, and television.

The *when* of such an agency appears to be upon us. With minor exceptions the means and facilities previously mentioned are with us today; those not available today are just "around the corner." Operations at such a level are becoming so complex and technical in some instances that the commander, even with the assistance of his principal staff members, cannot assimilate all of the major facets of the operation. Some group must predigest, analyze, and amalgamate all of the diverse activities, sift the "chaff," and absorb the technical matters so as to present meaningful plans, divorced from minutiae, to the principal staff members and the commander. Today, more than ever before, these plans must be thoroughly examined to make certain one agency is not contemplating operations that are at cross purposes with those of another. They, as well, must assure maximum utilization of all available

means for the common good of the entire Army. If these facilities and means are not so used, there can be little justification for their existence.

### Need Is Now

Since the detailed requirements exist now or in the foreseeable future for the use of these agencies sufficiently to justify expenditure of effort on research, design, manufacture, and the development of organizations and their training, then today is the time to design a structure to most efficiently employ them. Yesterday was the time to have devised the principles and concepts under which they were to be utilized. The need for this agency of combat support coordination is here now.

As is the case in the development of any military agency many military officers will agree, with minor dissensions, with the need and with the plan of organization, but individual ideas begin to really come forward when the *how* of operations is considered. One basic premise must govern this agency. It is under no circumstance an effort to make decisions by committee nor is it a device to usurp the commander's prerogatives. It is, on the other hand, an agency to facilitate the commander in reaching his decisions as to the manner of most effectively employing all the forces to develop the maximum in combat power.

### General Plan of Support

It should be the purpose of this coordination center to develop the scheme of maneuver and the general plan of support to complement that scheme of maneuver. To this group must be delivered feasible guidance. To a basic concept should be affixed all available support means to achieve most effectively the assigned or deduced mission. Details as to the exact "how" should not be developed by this agency; these can best be provided by the



appropriate commanders concerned. General provisions for missions, location, and allocations, however, must be developed within the coordination center. Care should be taken to make certain that, with its grouping of specialists and its excellent communications facilities, this agency does not become a "dabbling" agency—that is, one that dabbles in operations which are more appropriately the concern of subordinate commanders. If this is allowed to happen, it will become so immersed in unnecessary detail as to die of its own weight.

Allocations of atomic support means and an associated number of atomic weapons should be proposed. The areas in which psychological warfare efforts will be concentrated must be determined and appropriate themes developed. The plan for the active employment of partisan forces and the general areas and methods of operation must be contrived. Enemy units or frequencies upon which the maximum effort of electronic warfare is to be employed must be determined.

A detailed intelligence plan should be developed to provide timely and accurate information in those areas where intelligence is needed most. This type of coordination will provide the intelligence planner with a better understanding of the truly "high priority" intelligence requirements. Attention can then be focused and retained upon those areas and activities where such attention is most deserving.

The collection of aerial photos, conduct of aerial reconnaissance, operation of clandestine activities, and the collection efforts of subordinate elements can thus be provided with a purposeful direction. Authoritative allocation of the air space can be integrated with the air defense plan in a manner best designed to complement air offensive and defensive efforts over the army area of interest.

Allocations of artillery can be made to

complement the main attack and missions to artillery units can be provided with the maximum assurance that they coincide with the over-all mission. Long-range artillery can be controlled centrally with the assurance that it is being brought to bear at the most critical points. Rules of engagement for antiaircraft can be modified to coincide completely with the air operation plan and the air defense plan of both aircraft and antiaircraft artillery weapons can be welded together with maximum understanding.

### Establish Priorities

Priorities must be established to serve as guides in the allocation of tactical air support and requirements for tactical air support and aerial reconnaissance should be determined. The interdiction plan to be conducted by air and long-range missiles should be determined considering future requirements and plans. Requirements developed by this coordination center for tactical air support and aerial reconnaissance should be developed for periods of time, not for day-to-day operations. To resolve requirements for the next day only in these fields in a "daily planning conference" is an absurdity. It is as if First Army were to plan an operation in detail and then to wait and assemble its planners the night before to provide for ammunition or weapons for that operation. Although the joint operations center (JOC) concept served well in World War II, the advance of warfare and the speed with which combat operations must now be accomplished dictates that the scope of such operations be broadened; that all the weapons which contribute to the decisive land effort be coordinated by the army headquarters which maintains the primary interest in the ground battle.

Although there would be many more aspects to the operations of this coordination center, these few have been cited as typical of the activities to be conducted.

Their ultimate task would be to deliver to the commander and his principal staff members sound plans for providing the maximum in combat power to accomplish the mission. Once approved, pertinent orders could be issued by the commander to start the wheels turning. It would then become the task of this coordination center to provide meaningful guidance and interpretation to these wheels within the scope and intent of the commander's decision.

It is recognized that certain of the functions presently assumed by the JOC at the tactical air force-field army level have been included as those of the combat support coordination center. This was not accidental but was, instead, by design. Even if the joint operation center was truly a joint agency, *which it isn't*, and operating under optimum conditions of agreement, many of the interests and activities mentioned here would be beyond the scope of its concern. In determining what should be within the scope and interests of the combat support coordination, it appears only logical to include all these organizations and units that provide support to ground combat units to any significant degree, either directly or indirectly. Hence air support, air reconnaissance, and certain aspects of air defense were included. It should be the responsibility of this agency to develop the requirements for such support and they should be placed on the Air Force as such, through an air

liaison group in the coordination center, just as requirements for replacements, supplies, and services might be placed upon a supporting or higher headquarters.

### Conclusions

What has been proposed in this article is an idea. There exists no distinct pride in the name affixed to this organization. Representation at the agency and relationships between it and other agencies of the Army may prove in practice to have certain disadvantages that can be erased by modification. It must not be allowed to assume responsibilities and usurp prerogatives of the commander, and it is not advanced for the purpose of "whittling down to size" any branch or service.

What has been proposed is a means by which the employment of the many diverse and abstract weapons of war can be meshed together with those of long standing to assure maximum utilization of all means to lend effective support to combat units. Until we reach that idealistic stage when we have "plenty of everything" it will be necessary to adjudge at what point you may reduce in order to gain at another; who can contribute just a little more than in the past and in what manner; and where that maximum effort can and should be applied for the greatest benefit of all. It is for the purpose of facilitating the exercise of command judgment that the combat support coordination center is recommended.

Today's weapons in the hands of our soldiers, and developed by them, are the most effective of any Army in the world. Our Nike system can destroy any airplane, present or planned, regardless of great height and speed. Our infantry weapons, our armor, and our airborne forces are improving daily. And this is well, since we are entering a period of revolutionary change. What is modern today may well be entirely obsolete tomorrow. We must foresee the changes and develop the means to meet requirements of tomorrow's battles.

Lieutenant General James M. Gavin

# Seapower in the Mediterranean 1940 to 1943

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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**T**HE day of Britain's might at sea is past. Aircraft and the U-boats have turned surface fleets into the obsolete playthings of wealthy democracies. They are no longer a serious weapon in decisive warfare.<sup>1</sup>

This gem of prophetic wisdom, uttered by Hitler in 1934, characterizes his lack of understanding of seapower and goes far to explain his downfall—for the war which he unleashed became another testimonial to the continued vigor and indispensable value of seapower as well as of surface fleets. Not even the most ardent advocate of victory through the exclusive use of any one of the newly developed weapons will deny that, contrary to "expert" predictions, World War II was won by the "wealthy democracies" because they had superior seapower in addition to the other essential ingredients of national power.

Nevertheless, opinions similar to those held by Hitler more than 20 years ago—years crammed with convincing experience to the contrary—are still being voiced today, louder than ever before. Yet, logic as well as the most recent history prove quite conclusively that, unless the next war

ends in a few hours or days with the complete annihilation of both opponents, the proper coordination of all national services and capacities is still the only formula promising a meaningful victory, and that seapower is destined to play a decisive role in it. To deny these basic truths or to fail to implement them would be a grave disservice to the Nation.

To illustrate how they can be deduced from the experience of the past—and how they might again apply in the future—the story of the war in the Mediterranean has been chosen here from among the endless number of examples furnished by World War II. Being of sufficient scope to point up some of the complex political, economic, geographic, military, naval, and aerial problems involved in any major war, it is still less confusing than some of the other phases of global war, and thus allows useful lessons to be drawn without dangerous oversimplification.

No one who examines the record of this campaign can fail to deduce for himself, and be impressed by, these two facts: that without the effective cooperation of all three services it could never have been won; and that without the use of seapower it could never even have been fought. As most of the forces involved there found themselves far away from their homelands, they could not begin to operate without being carried there by ships across the sea; they could not maintain themselves without control of their lines of communication, the uninterrupted flow of supplies and reinforcements, which again could

<sup>1</sup> Hermann Rauschnigg, *Hitler Speaks*, London, 1940, p. 129

only come and be protected by ships; nor could they hold out very long without the existence of bases close to the theater of operations. Without such bases neither navies nor air forces could exert sufficient pressure on the enemy, but often it was the army which must first conquer them; without supplies from across the seas the army could not survive; without being transported to the scene aircraft could not reach their targets; without the fuel brought by transport vessels and guarded by warships they could not keep flying; while ships found themselves helpless unless protected by planes. And so it went on in an endless circle of dependences, with seapower playing a central role in practically every single event.

Thus the Mediterranean campaign offers a true instance of modern 3-dimensional warfare, in which the limitations of each of the armed services are compensated by the capabilities of one of the others. And while seapower may be using different tools in any conflict of the future, its function as a member of the winning team will remain essentially the same, its contribution to eventual victory just as indispensable.

### Sea of Decision

From the earliest era of human history the Mediterranean has been a sea of decision. In its double role of highway and bulwark it connected the centers of civili-

zation between Western Europe and the East. For Great Britain, in particular, it had become one of the main arteries of imperial traffic connecting the homeland with important parts of the Commonwealth. A large share of the manufactured goods, raw materials, fuel oil, and other necessities of modern life which Great Britain exchanges with the rest of the world pass through the Middle Sea, from Gibraltar to Suez and beyond, or vice versa. In time of war troops and their equipment are added to this list of essential transport items because being an insular country that is the only way in which Great Britain can project her power outside her own confines. The vast majority of all imports and exports must still go by ship, since planes are as yet able to carry less than one-thousandth part of the required freight. Realizing this, Great Britain throughout modern history has spent a material portion of her naval strength in the defense of the Mediterranean lifeline, and has gained and maintained there bases such as Gibraltar, Malta, Cyprus, and Alexandria, and kept troops in Egypt and Palestine.

But beyond its importance as a highway and a supply route, in World War II the Mediterranean was also considered by the British as the key to military victory over the Axis Powers. Its control made possible a firm hold on the Near, Middle, and Far East; exerted economic pressure on

***Regardless of new weapons, seapower's basic role is the best means of intensifying effects of land and airpower, by making them more mobile, offering them direct support, and safeguarding their supply***

zation which developed along its shores, extended their political, economic, and military effectiveness, and also served as a shield against attack and invasion. In more recent times, especially since the opening of the Suez Canal, its principal role has lain in offering the shortest con-

nection between Western Europe and the East. For Great Britain, in particular, it had become one of the main arteries of imperial traffic connecting the homeland with important parts of the Commonwealth. A large share of the manufactured goods, raw materials, fuel oil, and other necessities of modern life which Great Britain exchanges with the rest of the world pass through the Middle Sea, from Gibraltar to Suez and beyond, or vice versa. In time of war troops and their equipment are added to this list of essential transport items because being an insular country that is the only way in which Great Britain can project her power outside her own confines. The vast majority of all imports and exports must still go by ship, since planes are as yet able to carry less than one-thousandth part of the required freight. Realizing this, Great Britain throughout modern history has spent a material portion of her naval strength in the defense of the Mediterranean lifeline, and has gained and maintained there bases such as Gibraltar, Malta, Cyprus, and Alexandria, and kept troops in Egypt and Palestine.

ficient support by sea of Italian troops in East Africa, greatly strengthening their power for offensive and defensive action. It would eventually have allowed a junction of German with Japanese forces in the Indian Ocean with gravest consequences for the Allied cause.

### Possible Route of Invasion

Moreover, the Mediterranean represented a possible route of invasion of South-Central Europe. Although unable to mount a frontal attack on the German bastion, at least not alone, Great Britain could still think of a successful thrust at the soft underbelly of the Continent, along the Mediterranean coast, from France, Italy, or the Balkans. In short, even if final victory could not be gained for the Allies in the Mediterranean alone, it was considered the most important secondary theater of war, the vital link in the Allied chain of communications which prevented final defeat of the Allies while it prepared for the eventual downfall of the Axis Powers.

No wonder that Mr. Churchill was moved to state, as early as 1939:

*Now, there is a school of thought which favors what is called 'sealing up both ends of the Mediterranean' and leaving it as a closed sea. This policy will, I hope, be rejected by the Admiralty. . . . To gain and hold command of the Mediterranean in time of war is a high duty of the fleet.*

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*Once that is achieved, all European land forces on the shores of North Africa will be decisively affected. Those that have command of the Mediterranean behind them can be reinforced to any extent and supplied to any extent. Those that have no such command will be like cut flowers in a vase.<sup>2</sup>*

Becoming prime minister a little more than a year after this pronouncement, he pursued the policy outlined in his words to the utmost of his country's ability, for he felt that Great Britain's survival depended on the maintenance of her imperial lifelines as much as on the defense of Great Britain herself.

For Italy the situation was in many respects quite similar. Poor in natural resources and hence vitally dependent on imports which must come mainly by sea, Italy saw in the Mediterranean the only practicable connecting link with her sources of supply, her colonies, and dependencies. As Mussolini himself was fond of saying, Italy, for all practical purposes, was an island. But her vital sealanes were hampered by the fact that the two outlets from the Middle Sea were controlled by Great Britain which restricted Italian sea communications in wartime to the narrow confines of the Mediterranean itself. With a hostile Britain, even direct connection with their colonies in East Africa was denied the Italians.

### Of Vital Importance

Thus it was of vital importance for Italy to maintain control over at least the Central and Eastern Mediterranean with its sealanes to Africa, the Dodecanese Islands, the Black Sea, and the oil of the Near East. But it was also an essential task of Italian strategy to expand that control so as to include the Suez Canal and Gibraltar and make the Mediterranean a truly Italian lake. Only then could

<sup>2</sup> Quoted in *Sea Warfare 1939-1945*, John Creswell, London, 1950, p. 78



Italian ships go out across the ocean to gather the supplies on which the existence of their homeland depended. Only therein lay Italy's hope to keep in touch with her own empire, support a major and prolonged war effort, and survive it victoriously.

For Germany, on the other hand, the Mediterranean represented a less clear-cut and urgent issue. Thinking primarily in terms of land power—as is only natural for an essentially land-bound people—the significance of the Mediterranean was not immediately obvious or readily understood. During the first year of the war the problem of Germany's neighbors on land and of near-by Great Britain loomed far too large to leave much thought for the distant sea. Even when France was defeated and lay prostrate before the victor, Hitler did not think, much less attempt, to establish German domination over the Western Mediterranean via North Africa. Also, the Germans, quite understandably, considered it to be primarily the sphere of interest and concern of their allies or friends, Italy and Spain.

When the Italians failed to establish their command over that sea, there was, to be sure, some discussion of attacking Gibraltar as part of an Operation *Felix*. But this could be undertaken only with the full and active cooperation of Spain; Franco, however, was not ready or willing to plunge into war for that purpose, Spain being economically and otherwise exhausted and unable to withstand the hardships and risks of another war. The country was not a promising partner from the German point of view, especially since it could be of greater help by remaining a sort of back door through the British blockade of Europe.

Gradually, however, a greater awareness of the Mediterranean as a theater of war spread among German leaders. As they extended their control over the European Continent, Africa began to as-

sume the role of a militarily and economically essential adjunct. When Italy showed a primary interest in establishing dominance over the Balkans, and powerless to drive British seapower out of the "Mare Nostrum," unable even to defend her own colonial empire in Africa, the Germans were gradually drawn into the Mediterranean conflict. Although it originally had held no place in their war plans, their hand was forced by the threat of defeat in Libya and Greece. Moreover, as time went on they came to realize that the Mediterranean offered a new way of hitting Great Britain. Having failed in subduing that country either by aerial assault, submarine warfare, or invasion, a new form of attack on Great Britain's lifelines began to look more attractive.

In order to counter the effect of British seapower—which despite Hitler's predictions showed signs of surprising vitality—the German strategists conceived the "Around-the-Seas" plan of closing all access to the European Continent for hostile ships.

To be workable this plan called for the extension of Axis control from the Baltic and Northern Atlantic down through the Mediterranean. With France out of the conflict, the Mediterranean part of the plan had been assigned originally to Italy whose navy and air force seemed to be quite adequate to accomplish this task. When this proved to be illusory the Germans had no choice but to intervene.

In keeping with this gradual involvement German strategy in the Mediterranean was, at first, strictly defensive, lacking a long-range design. In time, however, a more positive concept came to be accepted. Göring even came forth with a grandiose project of solving the Mediterranean problem by invading Morocco through Spain, Asia Minor through Turkey, and Egypt through Libya. This ambitious extension of the "Around-the-Seas" plan was motivated not only by the desire

to deny the vital inland sea to the British, but also to keep the United States out of the European conflict by threatening South America from the narrows of Dakar. Admiral Raeder, although more realistic, thought in somewhat similar terms and, early in 1942, succeeded in winning Hitler over. At a conference on 13 February he told the Führer:

*The Mediterranean situation is definitely favorable at the moment. If we examine it in conjunction with events in East Asia, we can get some indication of the possibilities of launching an attack as quickly as possible on Egypt and the Suez Canal. . . . Suez and Basra are the western pillars of the British position in the East. Should these positions collapse under the weight of concentrated Axis pressure, the consequences for the British Empire would be disastrous.<sup>3</sup>*

If the Germans did not, after all, implement the "Great Plan" of undercutting Great Britain's world power, at least not sufficiently to guarantee eventual success, several reasons are readily discernible. One was the lack of German seapower in the Mediterranean, coupled with Italy's military ineffectiveness in the face of determined British land, sea, and air offensives. Hence the only way for the Germans to drive the British out of the Mediterranean was to establish themselves in strategic positions along the Mediterranean shores. Without seapower that could not be done except through the conquest of intervening lands, involving excessively long lines of communication through underdeveloped areas—Turkey, Asia Minor, Egypt, Spain, Morocco, and French North Africa, some of which could only be subdued by a major war effort. This was an ambitious project which went far beyond the military and economic capacity of Germany alone. Through their

seapower, on the other hand, the Allies could cover the long distances separating them from their strategic goals by ship, using the cheapest and most flexible form of transportation and avoiding conflict with any intervening country. Another reason for the German failure was the growing difficulty of keeping the Axis armies in Libya supplied with essential equipment, while Great Britain was continuously strengthening her forces in Egypt and the Near East which is just another way of saying that the Western Allies had seapower while the Axis did not. Finally, the demands of the developing campaign in the Soviet Union prevented the delegation of sufficient German forces, especially planes, to the Mediterranean.

As a result, the Mediterranean was never secured for Axis control. With the landing of the American-British forces in North Africa—possible only because Gibraltar had not fallen into the hands of the enemy—the first decisive step toward the ultimate defeat of the Axis Powers was made. It led to the downfall of Italy; reopened the Mediterranean as a vital Allied sealane, saving as much as 5 million tons of shipping space by shortening distances to the East; and enabled the building up of allied resistance to Japanese pressure.

### Italy's Military Position

At the time of her entry into the war, Italy's military position was, to all outward appearances, a strong and favorable one. Her own central position in the Mediterranean together with the geographic conformation of her colonial empire enabled Italy to throw her full forces against a necessarily divided and weakened opponent and to flank and dominate the Mediterranean and Red Sea traffic lanes. To do this successfully Mussolini had built up a large army, a considerable navy, and a voluminous air force. He also

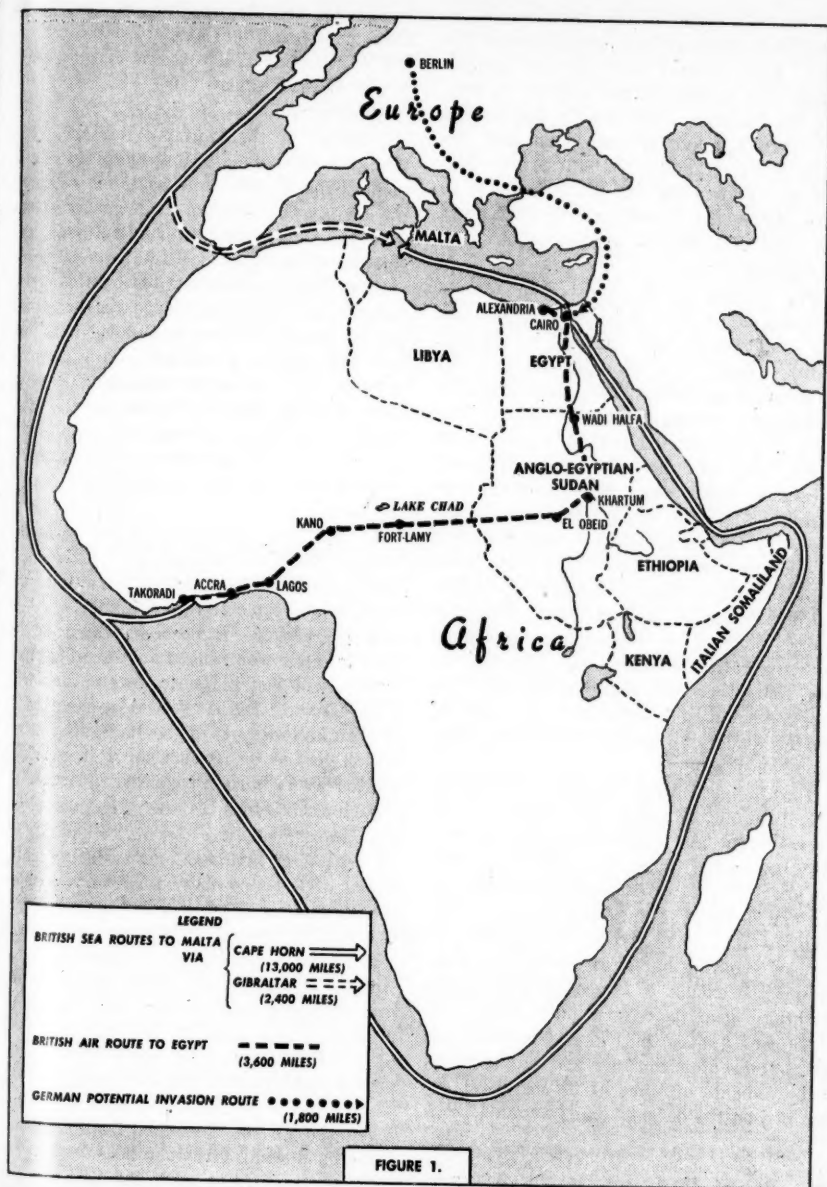
<sup>3</sup> Anthony Martiensen, *Hitler and His Admirals*, New York, 1949, p. 124



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had at his disposal a respectable merchant marine to support campaigns across the seas. But numbers and external appearances were somewhat misleading. In reality the Italians, while loudly applauding the Duce's imperial ambitions and defiant gestures, lacked the will to live dangerously and to pay the price of glory. In consequence the armed services were short not only of essential equipment but also of fighting morale.

The Italian Navy consisted of 4 to 6 battleships (2 new, 2 remodeled, 2 building and ready for service in August 1940) 7 heavy and 12 light cruisers, but no aircraft carriers. There were about 60 destroyers, a large number of smaller vessels, and a submarine fleet of over 100 units, one of the largest underwater forces at that time. But the fleet was hampered by poor cooperation with the air force, by Italy's inability to replace losses or increase her strength during the war, provide fuel, or take advantage of technical developments, such as radar. Thus the navy's qualitative inferiority with regard to Great Britain was gradually increasing. But over and above these technical weaknesses it also suffered from a lack of daring leadership and from a faulty basic naval doctrine.

Paralleling French views on that point, the Italians believed that strategic objects should and could be pursued without fighting and without exposing their fleets to losses. "... to conceive of a battle as an end in itself is an absurdity not worth discussing. . . ." From this position to one of avoiding battle at almost any cost, under the excuse of concentrating on the strategic goal, is only a short step.

In consequence the Italian Fleet, despite the outstanding courage and unparalleled achievements of some of its members, remained on the defensive and avoided tacti-

cal engagements as much as possible even during its occasional attempts at interfering with enemy traffic in the central part of the Mediterranean.

Similar weaknesses reduced the fighting ability of the Italian Air Force. Although well trained and supposedly ready to play the decisive role assigned to it by the Italian theoretician of airpower, General Douhet, it had in reality been developed as a showpiece and parade force rather than a fighting instrument. Its tactical doctrine also proved faulty, since it had concentrated on high-level bombing and neglected dive-bombing and torpedo attack. For operation against ships it showed itself entirely inadequate. Altogether, it failed completely to replace army and navy as the guarantor of victory in modern war, as had been claimed before the war.

At the very beginning of the war the Italian Merchant Marine, one of the most efficient of Italy's national services, suffered a heavy blow from which it was unable to recover. Almost one-third of its total tonnage was caught outside of Italian waters and lost before a single shot was fired. During the conflict it worked hard and unflaggingly to make its vital contribution to the war effort until it literally wasted away through excessive losses.

As noted before, in the very nature of the campaign by far the major portion of all transport involved had to be by ship. To be sure, every other form of transportation was used whenever feasible; thus the British opened an airway across Africa, from Takoradi to Alexandria, over which airplanes were flown to save time and shipping space. But this expensive measure, demanded by the extreme peril of the Egyptian front, could satisfy only a very small part of the total need, and the planes had to be carried to Africa by ship. Even though the Germans, taking advantage of special circumstances, succeeded in capturing Crete with the help of air-

<sup>4</sup> Directive of the Supreme Command of the Italian Navy, mid-September 1940. Quoted in Raymond de Belot, *The Struggle for the Mediterranean, 1939-1945*, Princeton, 1951, p 52

borne troops, they could only consolidate their position by the dispatch of additional and larger units by ship. Air transport could not at that time—and still cannot today—substitute for transportation by ship which is the chief benefit of seapower.

To implement their strategy of maintaining their hold on the Mediterranean, the British had reestablished their Mediterranean Fleet even before the beginning of hostilities. The eastern squadron, based on Alexandria, had been brought up to 4 battleships, 7 light cruisers, 18 destroyers, and 6 submarines, plus the aircraft carrier *Eagle*, which suffered, however, from a shortage of fighter planes. The Gibraltar squadron varied in its composition according to need and availability of forces. Neither fleet was at any time stronger than the combined and centrally located Italian battle fleet.

### Preservation of Malta

To make up for their numerical inferiority, the British relied from the beginning on a vigorous naval offensive and on the preservation of Malta to counterbalance the overwhelming Italian geographic advantages in the Central Mediterranean. From there they could harass the flow of Italian supplies to North Africa. But to try to hold the island in the face of almost absolute Italian air superiority in that area was another of the crucial decisions of the war, one to which British experts took exception. Only a few years previously, for instance, Air Marshal Sir John Salmond had expressed his conviction that "Malta, under air bombardment, which it is possible to bring from hostile shore bases, would be in ruins in 48 hours." In truth, to maintain control of Malta and to run convoys to it through the gantlet of the Strait of Sicily was roughly equivalent to a German attempt to hold on to Key West and keep it supplied in wartime, or for us to do the same thing with Tsushima, off Japan.

Yet, the task of cutting Italian communications with Libya was so important that the British must—and did—risk everything for that purpose. Both of the opposing desert armies could only be supplied by sea, not only because there existed no land connection with their motherlands, but also because the desert produces nothing whatsoever for the support of an army; even drinking water must be carried over many miles to reach the front. Beside, the desert offers few roads or even tracks and those that exist run close to the sea and are open to attack from there. Without logistic support by ship no army could live, let alone operate there, for any length of time.

The following brief account of the actual course of the war in the East Mediterranean is only meant to be a summary of highlights to illustrate the strategic situation outlined in the preceding pages, especially the interdependence of the armed services, their mutual reliance on logistic support, and the basic role of seapower. It is not meant to be a detailed, blow-by-blow record of tactical events.

In order to bring some type of order into the multitude of events filling the 3 years under discussion here, the campaign may be divided into three phases, of which the first covers the first 6 months, from Italy's entry into the war to the arrival of German forces in the Mediterranean. The second comprises the struggle between the British and the combined Axis forces for supremacy in that area, from early 1941 to late 1942, while the third begins with the landing of Allied forces in North Africa, November 1942. Only the first two will be treated here.

Even before they could turn against the Italian enemy, the British had to meet another potential menace, the presence of powerful units of the French Fleet in various parts of the Mediterranean, after France's surrender on 18 June 1940. In order to prevent their eventual use by the

German victors, the British faced the unpleasant task of neutralizing them as quickly as possible. They did it by the bombardment of Oran and by demobilizing the French squadron stationed at Alexandria.

### Unceasing Fleet Activity

Being vastly inferior numerically to the Italians on land and in the air, the British then used their fleet to harass the Italians, threaten their lines of communication with North Africa, and help bring the urgently needed reinforcements to Egypt and Malta. Frequent sweeps of the East Mediterranean squadron, under Admiral Cunningham, rarely, however, succeeded in locating the Italian battle fleet. Except for repeated but futile attacks by Italian shore-based planes on British ships and harbors, no offensive effort was made by the Italians during this, to them, most favorable and crucial period of the first few weeks.

But despite its unceasing activity, the British Fleet could do little to interrupt the steady flow of supplies to General Graziani's troops in Libya. Having the advantage of a short and well-protected passage, while the British were forced to operate from a base about 1,000 miles away, the Italians had little difficulty in maintaining their control over the Central Mediterranean. Only with Malta as a starting point could British naval forces, especially submarines, and planes hope to interfere effectively in that area. In those early days of the war, however, when a resolute attack on the poorly defended island fortress probably would have been successful, and was expected to come at any moment, the use of Malta as a naval base was clearly impracticable.

When the assault did not materialize, the British gradually began to strengthen the island's defenses by sending needed weapons and supplies, and soon found that they could run convoys from Alexandria to Malta without encountering effective op-

position. The same proved to be true of the growing number of convoys traversing the Red Sea; attacks on them by Italian naval and air forces stationed at Massawa were few and ineffective. Out of a total of 54 such convoys during the first 6 months, only 1 ship was sunk, all others arriving safely at their destination.

These successes, and the growing conviction that the Italian menace was not as serious as it had been assumed to be, finally emboldened the British to test the feasibility of using the short Mediterranean route for essential reinforcements, even though that meant passage through the narrow and hazardous Sicilian Straits. At first only fast naval units would be risked on that undertaking, and toward the end of August 1940 the battleship *Valiant* and the aircraft carrier *Illustrious* with two cruisers were sent through from Gibraltar. Although Italian battleships were sighted by British planes, they remained inactive and the operation came to a successful conclusion, greatly strengthening British fighting power in the East Mediterranean.

### Urgency Justifies Risk

On the basis of this experience two convoys of fast transports and warships carrying troops for Egypt were routed through the Mediterranean in November and December of that year, both of them again reaching their destination without any serious interference. The urgency of the situation had justified taking this risk, for in the meantime the Italians had launched an offensive from Libya on 12 September 1940 and had succeeded in pushing the British defenders back as far as Sidi Barrani, a few miles inside the Egyptian border, where they remained stabilized for the next 3 months. Among the main reasons for this poor result of an operation that aimed at reaching the Suez Canal and driving the British out of Egypt was the logistic difficulty created by the vigorous activity of the British Fleet along the coast.

With the African Campaign bogged down, Mussolini decided to try his fortune in Greece, starting an attack against that country on 28 October. This new development forced Great Britain to come to the victim's assistance by sending equipment and supplies from Egypt. If Graziani had taken this opportunity to press home his assault, he might well have achieved his goal. But he took no more advantage of it than did the Italian Navy of the possibility of striking at British convoys to Greece from two sides, Italy and the Dodecanese Islands. Another opportunity to come to grips with the British Fleet and to eliminate this constant threat to Italian communications and the main obstacle in the way of an Italian victory was thus lost.

#### Daring Coup

The new situation also offered some advantages to the British. With Crete as an intermediary base, the distance between Alexandria and Italy was cut in half, while the Dodecanese Islands were isolated and Italian communications with the Black Sea and Turkey were cut. Although this helped to confirm the British command of the Eastern Mediterranean, the Italian Fleet remained as a fleet in being, a constant potential threat which could become an actual menace at any time. Unable to draw it out into the open, Admiral Cunningham decided to eliminate it by striking at it in its own lair. The attack was carried out by planes from the *Illustrious*, with the aid of the Royal Air Force at Taranto, 11 November 1940. The losses and damage suffered by the completely surprised Italian Fleet were so heavy as to remove it, for a while at least, as an active threat to British control of the sea.

In addition to this daring coup, the British and Greek navies took every opportunity to attack Italian harbors and traffic lanes, making the logistic problem of the Italian armies as difficult as possible, while maintaining a steady flow of

their own ships in the Eastern Mediterranean. This constant reinforcement finally enabled the British to take matters into their own hands, even on land, and to mount a counteroffensive against Libya which, beginning 7 December, was a complete success, covering about 500 miles in the short period of 2 months and leading to the capture of 130,000 prisoners, 400 tanks, and 1,290 guns at a loss of only 2,000 men killed, wounded, or missing. This overwhelming victory over the Italian Army, commanded by Graziani, was made possible only by the active support, tactical as well as logistic, of the British Navy which used even its monitors and gunboats as water carriers, opened captured ports for maritime traffic, and protected the coastal line of supply. The advance only ended when it entered the effective range of planes based on Sicily, thereby exposing British sealanes to additional hazards.

Thus by the end of 1940 the situation in the Mediterranean was a very favorable one from the British point of view. Initial weakness on land and in the air had been covered up by a determined, purposeful, and propitious offensive at sea which allowed the gradual building up of the other services to a point where they, in turn, could take the initiative. In *A Sailor's Odyssey*, Admiral Cunningham expressed:

*This offensive had one result which, though perhaps hardly noticed at the time, was supremely important. It brought the three commanders in chief, naval, military, and air, closer together, and made them realize that success could only be obtained by continual coordination and cooperation; that each service depended on the others; and that the campaign by sea, land, and air was really one.*

With the beginning of the new year the Mediterranean war entered a different phase. Early in January the first German aircraft arrived in Sicily. On 10 January



a Gibraltar convoy en route to Malta and Greece with badly needed supplies, after sweeping aside some gallant but futile attacks by Italian destroyers, was suddenly struck by swarms of *Stuka* dive bombers. Directed primarily against the aircraft carrier *Illustrious* and other escorting warships, the assault developed a ferocity and precision hitherto unknown in the Mediterranean. Badly damaged, the *Illustrious* managed to limp into Malta, while the cruiser *Southampton* became a total loss. The cargo ships of the convoy arrived safely at Malta, but at a heavy price in naval forces, establishing a pattern which was to be followed for the next 2 years. As Admiral Cunningham stated:

*In a few minutes the whole situation had changed. At a blow the fleet had been deprived of its fighter aircraft, and its command of the Mediterranean was threatened by a weapon more efficient and dangerous than any against which we had fought before. The efforts of regio aeronautica were almost nothing compared with those of these deadly Stukas of the Luftwaffe.*

This attack began a series of events which came close to driving the British completely out of the Eastern Mediterranean and possibly winning the war for the Axis. Only Hitler's lack of understanding of the demands of global strategy and of the role of seapower prevented it from becoming a reality. The battle of the January convoy was first followed by increasing air strikes against Malta which again diminished the island's effectiveness as a base of operations against Axis shipping going from Italy to Libya. Next, in February 1941 General Rommel arrived in Libya with German armored troops and began to prepare a counteroffensive against the British Army in North Africa which, at that time, was being weakened by the necessity of sending almost half its strength to Greece. On 31 March Rommel opened his drive and quickly pushed the

British back toward Egypt. Only Tobruk held out, being supported and supplied by sea, but again at an exceedingly high price in ships, at a time when every available unit was needed to escort convoys from Egypt to Greece. Although the Axis reconquest of the Libyan coast narrowed the area in which British ships could operate without danger from air attacks, the British Fleet vigorously continued its campaign against Axis supply lines. Thus in the "Skirmish off Sfax" on 15 April a British destroyer flotilla annihilated a convoy of five cargo ships and several destroyers at the loss of only one British destroyer.

In February, also, German-Italian planes operating from Rhodes began sowing magnetic-acoustic mines in the Suez Canal, closing it to traffic for several weeks and thus practically isolating the British forces in the East Mediterranean.

#### Battle of Matapan

The ferrying of almost 60,000 men from Egypt to Greece offered the Italian Fleet another ideal opportunity to deliver a telling blow on their opponents. They did, in fact, prepare for such an undertaking, but British air reconnaissance from Malta revealed their intentions and caused the Alexandria squadron to go in search of the enemy. In the Battle of Matapan on 28 March the radarless and planeless Italians suffered a crushing defeat, aerial torpedoes damaging one of their battle-ships and sinking three heavy cruisers at the price of one British plane! Not until the next morning did the promised support by land-based planes arrive. This new naval victory was one of the few bright spots on the British side during that period, eliminating any threat from Italian surface forces for a long time to come.

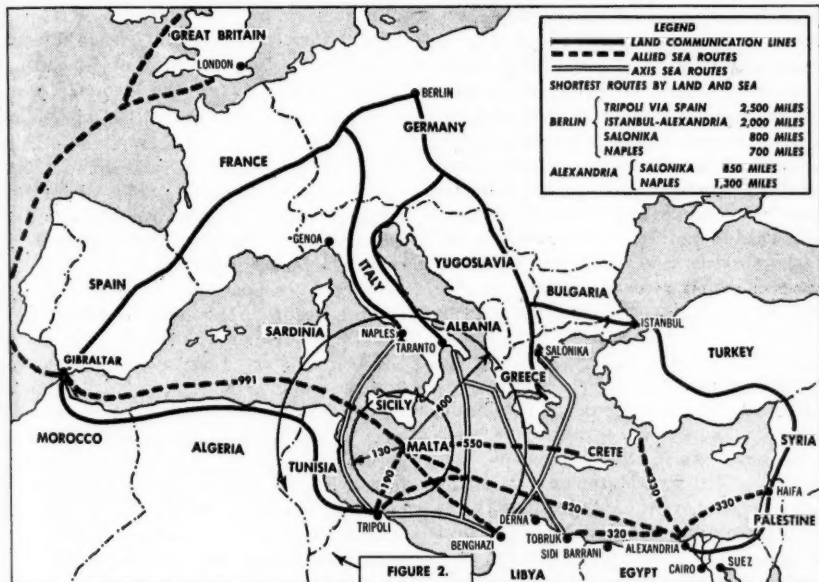
With the help of British troops and supplies the Greeks not only prevented the Italian aggressors from gaining an easy victory, but were about to deliver

an ignominious defeat on them when Hitler decided in early April to come to the aid of this hard-pressed partner. Overrunning Yugoslavia in a week, the German Army made fast progress in Greece and soon threatened to engulf the entire country. On 24 April the British were forced to start evacuating their expeditionary army. With Greek airfields captured or destroyed, the effective strength of the Royal Air Force was greatly reduced, leaving the Luftwaffe in almost

against ports and traffic lanes, athwart Italian lines of communication and about halfway between Alexandria and Malta. Land operations as well as supply lines along the coast of Cyrenaica were at the mercy of planes flying from the island.

### Capture of Crete

For these very reasons the Germans could not afford to leave Crete in British hands. Having no naval forces of their own in that region and unable to count on



uncontested control of the air over Greece and her ports. But despite some heavy losses in ships and equipment, the British Navy was able to convoy back to Egypt about 43,000 out of the 57,000 British troops on the Continent.

The loss of Greece was a serious blow to the British. Yet, as long as they held Crete they were still in a favorable position in the East Mediterranean, close enough to the mainland to enable them to launch effective attacks by sea and air

Italian naval support, they decided to rely primarily on their air superiority to capture Crete. On 20 May the actual invasion was launched by convoys of troop-carrying planes and gliders. Without adequate air support the position of the defenders soon became untenable and another evacuation of British troops had to be carried out.

Again the British Fleet exerted itself to the utmost to support its own troops, to carry them to safety after resistance had become useless, and to prevent seaborne



reinforcements from coming to the aid of the German advance forces which, having no heavy weapons or equipment at their disposal, were making only slow progress. By daring thrusts close to enemy-controlled ports of embarkation, the British Fleet succeeded in frustrating several enemy convoys to leave Greece. But these exploits exposed it to such heavy losses that it soon had to be withdrawn from the region. From 27 May on the invaders were able freely to use the sea for their own purposes and thus to consolidate their precarious hold on the island.

Although British writers usually maintain that the success of the Cretan invasion was due almost entirely to the airborne troops, German airmen themselves state that without the aid of the troops brought by ships they might not have overcome the island's defenses.<sup>5</sup> Thus even in this extreme case it was again the cooperation of all the services and all forms of transportation which assured victory.

#### British Losses

Altogether in the defense of Crete the British Fleet lost 3 cruisers, 6 destroyers, and 29 smaller vessels sunk, 1 battleship, 4 cruisers, and another 6 destroyers heavily damaged. As in the campaign in Norway, the Battle of Matapan, and many another crucial event of World War II, the Cretan affair again showed that a fleet can be helpless without the support of a mobile air force under its own control, that is, without aircraft carriers attached to the fleet itself. It does not prove that land-based planes make close-to-shore operations of ships impossible, but only that ships need the help of planes to be fully effective, and vice versa.

If the Germans had made full use of their newly gained advanced positions, their favorable interior lines, their air superiority, and the impression their victories made on the people of the Near East,

they might well have been able to continue their drive, isolating or overrunning Turkey, capturing the oil lines of the Levant, and even reaching the Suez Canal itself. But either they did not fully realize their opportunity or they were too preoccupied with their preparations for the invasion of the Soviet Union; in any case, they failed to follow up their success and gave the British time to rebuild their depleted ranks, letting victory which was within their grasp slip through their fingers. Except for stirring up trouble in Syria and Iraq, which was quickly quelled by the British, the Germans at that time practically withdrew from the Mediterranean.

In the meantime the British, while suffering these severe reverses in the Middle Sea, had succeeded in reinforcing themselves in East Africa to a point where they could go over to the offensive which, within a few months, captured the entire Italian colonial empire in that part of the world. With the occupation of the Ethiopian capital, Addis Ababa, on 5 April 1941, and the surrender of the Duke of Aosta, the Italian war effort in that region collapsed, making the Red Sea route safe enough to enable President Roosevelt to open it up to American shipping, thus greatly increasing its capacity and usefulness to the British. Again cooperation had paid handsome dividends, for without British seapower that victory could never have been won.

In the Mediterranean the conquest of Crete was followed by a period of comparative quiet. With the Libyan front more or less stabilized, naval forces of both sides depleted and in need of repair, and large sections of the German Air Force drawn off to the Soviet Union, only the war of supplies continued unabated during the latter part of 1941. Toward November, when the British were preparing for another thrust in the North African desert, British naval forces, again concentrated on Italian communications

<sup>5</sup> Raymond de Belot, *op cit*, p 127

with Libya, inflicting heavy losses on the already dangerously depleted Italian Merchant Marine. As recounted by Admiral Cunningham:

... during the month of October 1941 almost 63 percent of the shipping dispatched from Italy to Libya was sunk in transit. In November the percentage sunk or damaged was 77, and only 8,400 tons reached its destination, the lowest monthly delivery during the war. December saw 49 percent of the Libyan tonnage sunk or damaged. It very soon became clear to the Axis that if those conditions continued, their campaign in Africa could die through inanition.

Even routing ships far to the east along the coast of Greece and via Crete was no effective protection against British submarines and the ever-increasing range of aircraft based on Malta. On 29 December 1941 Mussolini sent the following message to Hitler:

*The last convoy of four ships has arrived, but for its protection some 100,000 tons of warships were employed. This caused such a heavy consumption of fuel that in future no resistance is possible in Tripoli unless the way is opened to Tunis [which would make the passage from Sicily shorter and safer].*

### Three Reasons for Failure

The second British offensive, launched 18 November 1941 after rapid initial progress, once more stopped short of its objective—the complete expulsion of the Axis from North Africa. Three main reasons may be deduced for this failure. One was again the tremendous logistic problem involved; as one writer puts it, the armies in the desert were operating as if attached to a rubber band: if it became stretched too far, it would either snap and leave them stranded, or it would pull them back into a more comfortable position. Another reason was the increasing effectiveness of

Axis aircraft as the British advance approached Sicily, especially after the Germans, taking advantage of the winter lull in the operations in the Soviet Union, returned a sizable part of the Luftwaffe to Sicily. The third reason was a series of misfortunes which at that time overtook the British Navy and almost wrested the control of the Mediterranean out of its hands.

On 12 November the aircraft carrier *Ark Royal* was sunk by a German submarine and was followed by the battleship *Barham* on 25 November. On 19 December several cruisers and destroyers were sunk or damaged when they ran into a minefield. On the very same day the Italians achieved their greatest naval success when three 2-man submarines penetrated the harbor of Alexandria and mined the battleships *Queen Elizabeth* and *Valiant*. In addition to these disasters the Japanese attack on Pearl Harbor necessitated the immediate dispatch of warships from Alexandria to the Far East.

Almost at one stroke the Mediterranean situation had changed completely again. The British Navy, deprived of its major units, was unable to support the land offensive; the Royal Air Force could no longer maintain air supremacy; and few British merchant ships succeeded in reaching Malta. Consequently, Axis convoys could again ply the sea without serious interference. In January 1942, for instance, not a single Axis ship was lost on the Libyan supply route, and sinkings continued low for the next few months. Increased reinforcements reaching Rommel soon enabled him to recover lost ground and prepare for his own counteroffensive.

### Rommel's Counteroffensive

Striking out on 21 January 1942 he advanced within 40 miles of Tobruk where he remained for several months preparing his thrust against Egypt while fighting another kind of battle in the Führer's Head-

quarters. The conflict concerned Malta, that remaining pillar of British seapower in the Central Mediterranean. While Admiral Raeder and Marshal Kesselring urged the permanent removal of this obstruction to Axis control of the sealanes by outright capture, Rommel and the Italian General Staff favored the concentration of effort on the Egyptian Campaign, with simultaneous heavy air attacks on the island to reduce its effectiveness. Once more the land-bound and short-sighted strategy of Hitler triumphed over those who clearly realized the role of seapower and the control of sealanes.

For the next few months, therefore, Malta experienced the most intense and furious pounding by air of any place in the world. That the island could withstand these attacks is almost unbelievable; that it could resume its former role as soon as the pressure eased up remains a miracle. To be sure, the price for keeping it supplied was terrific; but it was cheap when compared to the expense of losing the Mediterranean altogether.

With his supply system temporarily assured, Rommel could renew his attack on 27 May with such effect that soon the British Army was defeated and forced to retreat as far as El Alamein, within a few miles of Alexandria. With his advance proceeding so well, Rommel now prevailed upon Hitler to postpone the planned capture of Malta until after the end of the Egyptian Campaign, so as not to deprive him of needed air support.

Objections based on the difficulty of keeping him supplied while British naval forces made the North African shores unsafe, he dismissed as old-fashioned, since he could easily maintain himself on the material to be captured from the British. When Hitler accepted this advice, the fate of the Axis Powers in the Mediterranean, and possibly in the war as a whole, was sealed, their eventual defeat being only a matter of time.

### Success at Malta

Reaching its climax in April 1942, the air attacks dropped a total of 14,000 tons of bombs on Malta, but cost the Axis 1,126 planes against 568 for the defender. At the same time, however, planes, submarines, and surface ships based on Malta destroyed almost 1 million tons of Axis shipping which is the true measure of the island's success.

As soon as the Luftwaffe let up on these attacks, ships with supplies again began to arrive enabling Malta to hold out. Moreover, in April 1942 American fighter planes were flown in and helped bolster the island's defenses. In June, while Rommel savored his greatest triumph, Malta already had begun to recuperate and to resume its old function. Losses on the Axis supply route immediately began to mount and soon became prohibitive, leaving Rommel without fuel to operate his armored divisions. Although submarines and planes continued to bring in a trickle of reinforcements and equipment, it fell far short of the demands of a major operation.

By mid-September 1942 Malta was safe and the Axis everywhere were on the defensive or in retreat. By December the Mediterranean was restored as the main Allied sea route to the East. With American help the Army of the Nile was quickly reconstituted and could again change over to the offensive. On 23 October the third and last British drive began and did not end until 23 January 1943 when the junction with General Eisenhower's forces was effected. The failure of the German-Italian land campaign, together with Allied control of the seas, was, of course, the essential prerequisite for the success of the Allied landing in western North Africa which had occurred the preceding November.

Cut off from its bases and rapidly losing even local air superiority, the Axis army made a last brilliant but futile

stand in Tunis. Since even evacuation was impossible under the circumstances, it was forced to surrender on 13 May 1943 thereby sealing the doom of Italy.

### Conclusions

For 3 years the struggle for the Mediterranean had proceeded fiercely and with heavy cost to both sides, the outcome in suspense almost to the last minute. Among the many lessons we can draw from it is the realization that despite the progressive mechanization of warfare the human factor is still decisive, and that no military force is stronger than its supply system. But since in the foreseeable future neither airplanes nor guided missiles can replace ships as carriers of bulky equipment and materials, sea traffic remains the principal method of logistic support in any global conflict. That means, however, that seapower, the ability to use the sea for our purposes, continues to be an essential prerequisite of victory, and that its three foremost elements, the navy, the merchant marine, and bases, are as necessary to us as they ever were.

Of the four Allied victories which mark the turning point of World War II: Libya, North Africa, Guadalcanal, and Stalingrad, at least three are inconceivable without the aid of seapower. In view of these facts the dictum of the geopoliticians that "He who rules the heartland rules the world island and in time will rule the whole world," must be modified by adding: "but only if seapower permits it!" For even today it lies within its capacity to prevent such a calamity; if it is alleged that new tools of destruction limit its former role of this country's first line of defense, it must also be admitted that they multiply its striking power at least as much as they increase its vulnerability to them. Regardless of such new weapons, the basic role of seapower remains what it has always been: the best means of intensifying the effects of land and airpower, by making them more mobile, offering them direct support, and safeguarding their supply. No global conflict could conceivably be won by us without its proper coordination and cooperation with all the other services and forms of national power.

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Effective seapower underlies the effective defense of the free world. First of all, seapower is vital to economic strength and health. Seapower in the hands of the West means that trade can flow and, we hope, will grow. Seapower also ensures that the raw products of the free world can be exchanged across the seas, processed into the material needed, for further expansion and growth. The sealanes interconnecting us with the free world are indeed the lifelines of the free world.

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Militarily, seapower is still indispensable to survival and success, whether in global war, atomic or traditional, fringe wars, or cold wars. By itself, seapower cannot achieve a military victory; but it is still valid to say that no type or size of war can be won without seapower.

Seapower guarantees the free world access to overseas markets which supply the myriad of raw materials necessary for the production of the machinery of war. Seapower ensures that this material—raw and finished—gets to the right place at the right time.

*Secretary of the Navy Charles S. Thomas*

# MILITARY PROBLEM SOLVING

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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

THE search for the secret of success in war parallels the history of war itself and takes its early form in the maxims, principles, and rules which have come down to us. While these condensations of wisdom were developed to make use of past experience and place the conduct of war on a sound basis, they do not quite succeed. The realization that the solution to military problems must be approached by systematic and logical examination of all the considerations which have a bearing on the problems has resulted in the evolution of the estimate of the situation to the present form as prescribed by the Joint Chiefs of Staff (JCS).

Before discussing the application and the logical foundation of the estimate it is necessary to consider briefly the two basic methods of reasoning—inductive and deductive—to point out the values of each, and discuss their use.

The *inductive method* is a process of reasoning which leads from the consideration of facts or specifics to generalities or principles, and is the method used in developing general scientific laws. While it is the only means available for the discovery of new laws and the expansion of horizons, it is weak since it can never establish a law or generality as a certainty. The law or generality is only as good as the facts from which it is derived

and, consequently, may be demolished by the addition of previously unknown or forgotten facts. The inductive method, then, produces only probable results, but it is the only method available for the solution of many problems.

The *deductive method* is a process of reasoning which leads from the consideration of generalities or principles to particulars or facts, and is ideally embodied in the methods of geometry. Its conclusions are as sound as the laws upon which the conclusions are based. While deductions based upon physical laws are as sound as the laws themselves, deductions based upon generalities are only generalities. The deductive method is weak in that it can produce nothing new, that is, something which is not already inherent in the basic laws.

Of the two systems—inductive and deductive—we are more familiar with the deductive method. This has resulted from our studies of and an almost religious belief in mathematics—which is totally deductive. As a result we are prone to use the deductive method as it is employed in mathematics in the expectation of achieving a single positive result. This process is possible in mathematics where the deduction progresses from sound basic laws or concepts; however, it is not sound in general application where generalities are the only basis for deductive reasoning. Using the deductive method exclusively, problem solving may thus become an almost mechanical process which, if followed far enough, will produce an answer—right or wrong.

The approach to the solution of military



problems by the method of systematic and logical thought has resulted in the present form of the estimate of the situation. The procedure which is contained in the JCS form of the estimate is a combination of both the inductive and the deductive methods. In broad concept it is inductive, and in the detailed application it is deductive. The estimate recognizes that new developments require an inductive approach; however, it attempts to minimize the uncertainty of the inductive method by using the deductive method wherever possible to provide a sound base for thinking and to establish directional guidance.

If warfare were a science rather than an art, it would be possible to lay down rigorous laws for conduct. Once the laws had been established it would be reasonably simple to employ the deductive method to reach the one best solution to any particular problem. Unfortunately, the laws we have are not rigorous but are only guides (generalities) for conduct and they require intelligent application.

### Infinite Number of Solutions

In problems where there are no underlying laws there is theoretically an infinite number of solutions; these solutions will have many degrees of merit depending upon what is desired. However, it is improbable that any one solution will fulfill all of the conditions in the desired manner and, consequently, the determination of

a. A grasp of the salient features of the situation.

b. A recognition of the incentive.

c. An appreciation of the effect desired.

2. Actual solution of the problem by reasoning power by:

a. Consideration of the possible solutions.

b. Selection of the best solution.

3. Formalization of the conclusion or decision embodying the best solution.

While the natural thought process is sound, it provides little help and practical guidance in the solution of military problems. It does not, for example, provide any assistance in accomplishing the various steps; it simply enumerates the steps which are normally taken. The estimate of the situation follows this thought process, with certain modifications, establishes procedures which will assist in accomplishing the steps, and, in addition, directs attention to areas of consideration which have been found by experience to be of importance. Before proceeding to an examination of the estimate it is important to realize that it is difficult, if not impossible, to reduce the method of solving complex problems to a list of actions which can be accomplished in sequence and written out in order. Much of the material required in the early parts of an estimate depends upon subsequent parts of the estimate. As a consequence, an estimate in written form

***The realization that the solution to all military problems must be approached by a logical examination of all considerations bearing on the problems has resulted in the evolution of the estimate of the situation***

the best solution becomes a matter of judgment. The method of approach to such problems follows the natural thought process which may be broken down into three steps:

1. Establishment of the proper basis for the solution of the problem:

is an after-the-fact recording of a repeated working and reworking of the estimate. The solutions to difficult problems are usually the result of what is sometimes called inspiration, but which are actually the result of imaginative and systematic thinking based upon a complete and thorough

knowledge of the situation. While the use of the estimate will not guarantee success, a failure to use it or its procedure will almost certainly produce failure.

The method to be employed in this article is a step-by-step analysis and discussion of each of the five paragraphs of the estimate in light of the material already presented.

### 1. Mission

*A statement of the task and its purposes. If the mission is multiple, determine priorities. If there are intermediate tasks, prescribed or deduced, necessary to the accomplishment of the mission, such tasks should be listed in this paragraph.*

Reserving paragraph 1 of the estimate for the mission erroneously suggests that the mission is determined before any of the subsequent paragraphs are considered. The mission is placed at the beginning of the estimate in order to emphasize its importance as the basis of the estimate.

As pointed out in the natural thought process, the mission does not always spring forth full grown. The mission is determined as a result of the incentive which set the estimate in motion, and involves a consideration of the salient features of the situation to determine not only the task but also its purpose. In many military operations the directive (incentive) from higher headquarters may be sufficiently detailed to be used as a statement of the task; in others the directive may be

so general in nature that an estimate is required to determine what is desired. During the conduct of an operation a change in the situation may be the incentive which requires that the situation (including the over-all intent of the higher commandant) be studied to determine a new or more precise mission.

In almost all instances a detailed study of the situation will be required to determine not only the "why" but also the precise task(s) of the mission. A thorough understanding of the mission, including its purpose and the intent of higher headquarters, is fundamental to the estimator since it is the basis for relevancy and comparison throughout the estimate.

### 2. The Situation and Courses of Action

#### *a. Considerations affecting the possible courses of action*

*Determine and analyze those factors of the situation which will influence your choice of a course of action as well as those which affect the capabilities of the enemy to act adversely. Consider such of the following and other factors as are involved:*

(1) *Characteristics of the area of operations including terrain, hydrography, weather, communications, as well as political, economic, and psychological factors.*

(2) *Relative combat power including enemy and friendly strength, composition, disposition, status of supply reinforcements.*

It must be remembered that the estimate is designed for the specific purpose of solving military problems in which the possible actions of the enemy will have a major bearing on the decision. While paragraph 2a of the estimate anticipates this special purpose, it is, nevertheless, similar to the first step in the natural thought process which requires a grasp of the salient features of the situation. Guidance and assistance in the grasp of the salient features of the situation are provided by requiring the determination and analysis

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of factors (considerations) which will influence the choice of a course of action (C/A) and the determination of enemy capabilities. This statement has been the subject of some misinterpretation, as will be pointed out later, but it recognizes that certain areas (factors) must be considered if a valid estimate is to be made and focuses attention upon them. It provides further guidance by specifically directing that characteristics of the area of operation and relative combat power be considered. These instructions anticipate later requirements of the estimate and should be regarded as sound guidance but not as a restriction on either the facts which are considered or the degree of analysis which is made.

A close examination of the instructions "Determine and analyze those factors of the situation which will influence your choice of a course of action. . . ." reveals certain difficulties. In this instance the term "factor" is given a rather positive meaning and is used to denote two areas which must be considered—characteristics of the area of operations and relative combat power. The determination of all of the factors which will affect the choice of a course of action is theoretically impossible at this stage of the estimate when courses of action are not yet known. The two factors enumerated are sufficient as a starting point and can be augmented and reconsidered if later parts of the estimate require it.

#### Much Discussion and Disagreement

The instructions direct that the factors be analyzed and enumerate the various subheadings which should be included within these factors. The instructions, however, do not cover the extent of analysis. The amount of analysis which is carried out in this paragraph has been the subject of much discussion and argument. The Army and Navy differ in their expanded form of the estimate and treat the degree of analysis somewhat differently.

Facts in themselves are sterile. Their value lies in the conclusions which can be drawn from them. As an example: the fact that it is raining is in itself useless, but the inference that it may reduce cross-country mobility and visibility is of some use. The combination of inferences drawn from a large number of facts may be more useful. As pointed out previously, this is deductive reasoning and if pursued to an ultimate conclusion, can result in a premature and improper decision. Each of the services recognize this pitfall and handle it differently. The Army, as a result of past experience, limits the analysis to a greater degree than the Navy. As an example: in the Army estimate weather, terrain, enemy situation, and own situation are analyzed separately but not in combination.

The Navy, on the other hand, analyzes these considerations in the same manner as the Army but, in addition, ties these separate analyses together by requiring the enumeration of conclusions concerning strength and weakness. The Army procedure is more conservative and guards against premature conclusions, while the Navy estimate anticipates the difficulties of later parts of the estimate and attempts to provide for them.

If the purpose of paragraph 2a is kept in mind "a grasp of the salient features of the situation," it is possible to pursue the analysis as far as desired. Strength and weakness factors, as will be pointed out later, are of considerable value in formulating courses of action.

#### b. Enemy capabilities

*Note all the possible courses of action within the capabilities of the enemy which can affect the accomplishment of your mission.*

Paragraph 2b is included to provide for the special method which is employed in the estimate. The estimate recognizes that the outcome of military operations depends upon the interaction of two forces each of

which exercises a freedom of action independent of the other. The decision is based upon a consideration of the outcome of all possible battles which can result. In order to provide for the orderly development of this process, paragraph 2b is provided to enumerate all of the actions which the enemy can take. These enemy capabilities may be developed from a consideration of paragraph 2a; however, they are normally provided by the G2.

The capabilities enumerated by G2 must meet two conditions: The enemy must be physically capable of the action, and the action must affect the accomplishment of the mission either favorably or unfavorably. The use of these conditions has caused some difficulty in formal estimating since they can lead to capabilities which involve all or only a small part of the enemy forces (forces locally available, reinforcements, artillery, air, atomics, guerrillas, and saboteurs). Since the decision is to be based upon a consideration of the outcome of all possible battles, complete and integrated enemy capabilities (courses of action) involving the actions of the enemy forces as a whole must be used if the enemy is to be given credit for sound intelligent action. This requirement for complete enemy courses of action does not minimize the importance of the capabilities enumerated by the G2. It does, however, point out that the precise enemy capabilities must be synthesized into enemy courses of action before they can be used in the estimate.

#### *c. Own courses of action*

*Note all practicable courses of action open to you which, if successful, will accomplish your mission.*

Paragraph 2c is of utmost importance in the estimate. Its position as a subparagraph of paragraph 2 gives an erroneous impression of its importance and incorrectly suggests that courses of action are formulated in the same manner as enemy capabilities.

In the natural thought process the formulation of all possible solutions (courses of action) is treated as an entity. This formulation consists not only of the formulation of possible solutions, but also requires a detailed and complete understanding of each possible solution. In the estimate the complete consideration of each course of action takes place in paragraphs 2c and 3 of the estimate. The splitting of the consideration of courses of action into paragraphs 2c and 3 results from the special method which is employed in the estimate. Paragraph 2c is limited to an enumeration of courses of action which, if successful, will accomplish the mission. Normally, courses of action in paragraph 2c are limited to basic ideas with only sufficient detail to provide a clear conception of and differentiation between basic ideas.

Up through paragraph 2b in the estimate the thinking is capable of being systematized and reduced to deductive logic or experience. It requires a certain degree of imagination but is better characterized by thoroughness, completeness, and adherence to system and detail. These conditions are not sufficient for the formulation of paragraph 2c, *own courses of action*. An analysis of the facts of the situation and a consideration of strengths and weaknesses will lead to many possible courses of action; however, it will not lead to all possible courses of action. In the usual operation conducted by a division, corps, or army, courses of action have become almost automatic or traditional. In many situations the selection of courses of action, based upon experience or precedent, will be entirely suitable; however, in many other situations they may produce only mediocre results. The essence of the development of courses of action is imagination—*imagination unfettered by tradition, experience, or prejudice*. A course of action cannot be considered if it is not proposed.

The inductive part of the estimate is

embodied in paragraph 2c. Since by the very nature of the problem an unlimited number of solutions are theoretically possible, it is of utmost importance that great effort be expended in considering as many courses of action as possible. After the course of action has been proposed, it may then be looked at from the viewpoint of tradition or experience to determine its soundness. Even this, however, is subject to grave logical criticism and should be avoided if possible. The sounder practice is to test the course of action in light of a thorough knowledge of the situation and the capabilities of the units involved.

The purpose of paragraph 2c is to list only those courses of action which, if successful, will accomplish the mission. The smaller the number of courses of action included in 2c, the easier the estimate will be. In complicated estimates where there is adequate time, it is advisable to make detailed feasibility tests to determine the adequacy of each course of action. In shorter estimates made at tactical level for usual tactical situations a mental feasibility test will be sufficient.

With an overwhelming superiority over the enemy, almost any course of action will accomplish the mission. The selection of courses of action in such a situation can and should be imaginative. They can be based upon other considerations in addition to the accomplishment of the immediate mission. In such case the other considerations might be to facilitate future operations as envisioned in the mission of higher headquarters, to reduce the cost of the operation, or to achieve a maximum degree of success.

In cases where we are either equal or even inferior to the enemy, the determination of courses of action becomes difficult. It may be impossible to propose courses of action if we assume that the problem must be solved in light of the facts and the enemy capabilities. One method which has been used in such cases is to assume,

for the purposes of the estimate, that the enemy will take a certain action and to base the estimate on that assumption. If the results of the estimate look promising, it may be possible to lead the enemy to take the assumed action by proper tactical and deceptive measures. The estimate of the situation for the invasion of Europe must have assumed that the enemy could be prevented from determining our main effort and, consequently, gave rise to the deceptive measures which were taken. In such a case the reliance on unimaginative deductive methods would have been inadequate. Another method might involve an assumption of a change in the facts of the problem. As an example, a river may be unfordable; however, if an underwater bridge can be built secretly the river is passable but still unfordable as far as the enemy is concerned.

The normal procedure which envisions three or four courses of action in paragraph 2c must be viewed with considerable caution. It is usually possible to prepare three or four courses of action for inclusion in paragraph 2c; however, on the basis of ability to accomplish the mission the courses of action may be limited to one or may include a dozen.

### 3. Analysis of Opposing Courses of Action

*Determine the probable effect of each enemy capability on the success of each of your own courses of action.*

As pointed out previously paragraph 3 is included in the estimate to provide for the special type of problem which the estimate is designed to solve. Military operations have the characteristic of a two-sided game where the opponents exercise free will. As a consequence the natural thought process which proceeds from a consideration of courses of action to a comparison of courses of action is inadequate. It is possible to make an estimate without the isolation of enemy capabilities and the analysis of opposing courses of action. In fact, the inclusion of the

analysis of opposing courses of action is only a recent development in the estimate.

In the earliest estimates a determination of the effect of enemy capabilities upon courses of action was accomplished in the development of courses of action. Since this procedure did not specifically develop the consequences of the various possible actions of the enemy, it was discarded in favor of the new form. Under the earlier system the principal emphasis was directed to a thorough understanding of the situation—a condition which continues to prevail in some interpretations of the present estimate. This condition continues to prevail due to an inherent distrust of the completeness and accuracy of intelligence of the enemy. It is based upon a desire to eliminate uncertainty from the estimate—consequently the uncertain enemy is played down.

Superficially, paragraph 3 appears to employ the scientific method which has as its purpose the exhaustive analysis of all combinations of variables within the problem being solved. Actually, the scientific method and paragraph 3 differ in their fundamental purposes. While the scientific method attempts to establish general relationships between variables, paragraph 3 attempts to determine the results of the interaction of two variables for the purpose of reaching a well-defined goal. This difference has caused considerable confused thinking in the military estimate. By assuming that the estimate is attempting to establish general relationships, the estimator loses sight of the fact that he is attempting to determine the outcome of each of his courses of action when it is opposed by each enemy capability. This confusion takes form in the instructions contained in Field Manual 101-5, *Staff Organization and Procedure*, which states in discussing paragraph 3, "The commander then will begin to isolate the governing factors of the situation, i.e., those which have an important bearing on the

choice of the most suitable course of action." These instructions lose sight of the stated purpose of the comparison which takes place in paragraph 4, that is, "... decide which course of action promises to be the most successful in accomplishing your mission." If paragraph 3 "determines the outcome" of each course of action when opposed by each enemy capability then the comparison in paragraph 4 is a comparison of *outcomes* since the purpose of the estimate is to select the course of action which *promises* to provide the most favorable *outcome*.

This confusion concerning factors stems from two sources: the earlier form of the estimate where the decision was based upon the inherent and intrinsic characteristics of each course of action (in the present estimate the decision is based upon the *result of the interaction of enemy and friendly forces*); and the instructions contained in paragraph 2 "determine and analyze the factors which influence your choice of a course of action. . . ." This statement can erroneously lead to the conclusion that the factors are intended as the basis of comparison in paragraph 4. Actually, the statement merely directs attention to the salient features of the situation which must be considered if valid courses of action and enemy capabilities are to be developed. These factors are merely an attempt to assist in a "grasp of the situation." The instructions might well be phrased "Determine and analyze all the facts which are necessary in the solution of the problem."

Since accomplishment of the mission is the test of all courses of action, they must take into account the capability of the enemy to prevent this accomplishment of the mission. These capabilities are enumerated in paragraph 2b and may be in fragmentary form (forces locally available, reinforcements, artillery, air, and atomics).

As a consequence the number of analyses

(courses of action versus enemy capabilities) will become very large. Current practice provides for the elimination of enemy capabilities which do not assist in the selection of a course of action. This practice is unsound since courses of action must not only consider all enemy capabilities for their full development but also must consider these same capabilities to determine the success of a course of action.

The practice of using fragmented enemy capabilities as the basis of an analysis may lead to unsound conclusions as they do not consider the simultaneous effect of all of the capabilities which the enemy can adopt at one time. A sound analysis requires that the enumeration of enemy capabilities be equally as complete as courses of action. The use of complete enemy "courses of action" will automatically dispose of the problem of the use of fragmented courses of action and the elimination of those which do not assist in the selection of a course of action.

The fundamental purpose of paragraph 3 requires that a sound conclusion be reached concerning the outcome of each course of action as opposed by each enemy capability. These analyses, in order to be valid, must develop the course of action fully and consider all pertinent information presented in paragraph 2a. The factors of paragraph 2a, including the strength and weakness factors, will serve as a convenient checklist for this purpose and ensure that maximum advantage is taken of the situation.

#### Concentrate on Determining Outcome

Present practice envisions paragraph 3 as providing a complete and detailed analysis of the interaction of all possible combinations of forces (courses of action versus enemy capabilities). These analyses are intended to ensure that the commander will not be surprised and will be prepared to act in any eventuality. While these analyses may be required to determine out-

come, they should be regarded as *means* and not as *ends* in themselves. The all important purpose of paragraph 3 is a determination of *outcomes*. It is possible in certain instances to determine outcome without an exhaustive analysis of the interaction of forces. If long detailed analyses confuse and direct attention from the fundamental purpose of paragraph 3, they should be made as brief as possible consistent with a sound conclusion concerning outcome. Even simple estimates can become long—and consequently confusing—and should be kept as brief as possible with emphasis upon important considerations.

#### 4. Comparison of Opposing Courses of Action

*Weigh the advantages and disadvantages of each of your courses of actions and decide which course of action promises to be the most successful in accomplishing your mission.*

The purpose of paragraph 4 is to compare courses of action to determine the one which promises to be the most successful. Since there is no way of knowing for certain which capability the enemy will adopt, each course of action must provide for all enemy capabilities. Each course of action will have varying success depending upon the capability which the enemy adopts. The criterion for selection of each course of action depends upon a comparison of the least favorable outcomes which can befall each course of action. This comparison can be demonstrated by the matrix employed in game theory suggested by O. G. Haywood, Jr., in "Military Decision and Game Theory," *Journal of the Operations Research Society of America*, September 1954.

In this matrix as shown on the chart on page 37 the lines are used for courses of action and the columns for enemy capabilities (enemy courses of action). The squares are used to record the outcome of the analysis conducted in paragraph 3. An additional column is used to record the



worst outcome which can result from the adoption of each course of action. The course of action which promises to be the most successful in accomplishing the mission is the one which produces the best outcome as recorded in the least favorable column.

It should be noted that there are two comparisons which take place in using the matrix. The first involves a determination of the worst outcome which can befall a single course of action. This first comparison is made to each course of action. The second comparison involves the least favorable results of each course of action to determine the best among the least favorable results.

#### Objective Determination of Outcome

It may be argued that it is not possible to arrive at precise usable conclusions concerning the least favorable outcome resulting from each analysis. If this is true, it is also impossible to make an objective selection of a course of action which promises to be the *most successful* in accomplishing the mission. Whenever an estimate results in a decision, the estimator has been forced to calculate the possibilities of success and decide upon the course he is to follow. This decision may be the result of intuition, subjective belief, or objective analysis. Intuition and subjective belief have no place in a logical estimating process and should be left to the military geniuses which Providence provides. An objective analysis will require an objective determination of the possibilities of success. If this can be done in arriving at a decision, it can be done more easily in each of the less complicated instances in paragraph 3 where the enemy is, by the nature of the analysis, committed to one course of action.

It is entirely possible and proper that a commander will desire to base his decision on other considerations concerning the outcome, in addition to the promise of success. He may desire to facilitate future

operations, reduce the cost to himself, inflict maximum destruction upon the enemy, or to reduce the risk to his own forces. These considerations may be handled using the same matrix to tabulate conclusions reached in paragraph 3. In reaching these conclusions relative terms such as good and bad should be avoided. If, for instance, future operations are to be used as a criterion, a conclusion that the enemy would be permitted to withdraw in good order beyond our objective would be valid. The weight to be placed upon the various conclusions concerning these other desirable characteristics will depend upon the judgment of the estimator. There is a grave danger in this use of additional criteria in that it permits the estimator to resort to intuition or subjective belief. So long as the forms of the JCS prescribe that the decision will be based upon the course of action which promises to be most successful, the estimator must determine which of his courses of action promises to be most successful. After he knows which of his courses of action promises to be most successful *he may then consider other additional desired effects*. There must, however, be good and sufficient reason for deviating from the course of action which promises to be most successful.

#### 5. Decision

*Translate the courses of action selected into a concise statement of what the force as a whole is to do, and so much of the elements of when, where, how, and why as may be appropriate.*

This paragraph is essentially one of technique. The decision is the formal statement of the conclusion reached in paragraph 4.

#### Conclusions

The estimate of the situation is designed to solve military problems where the possible actions of the enemy have a fundamental influence on the decision which is made. The mission of the estimate must



be considered in light of the situation to determine not only the tasks which are to be accomplished but also to determine the purpose of those tasks. All facts which can have a bearing on the accomplishment of the mission must be analyzed and thoroughly understood before the estimate is

These enemy capabilities should take the form of integrated enemy courses of action. Great imagination and effort should be used in the formulation of feasible courses of action to ensure that all possible courses of action are considered. The comparison of courses of action is actually a com-

	Enemy Capability A	Enemy Capability B	Enemy Capability C	Least Favorable Outcome
Course of Action 1	Outcome 1 vs A	Outcome 1 vs B	Outcome 1 vs C	Least favorable outcome to C/A 1
Course of Action 2	Outcome 2 vs A	Outcome 2 vs B	Outcome 2 vs C	Least favorable outcome to C/A 2
Course of Action 3	Outcome 3 vs A	Outcome 3 vs B	Outcome 3 vs C	Least favorable outcome to C/A 3

made. The estimate recognizes the special problem of military operations which involves two forces, each of which exercises free will, and requires that the decision be based upon a consideration of the outcome of all possible engagements of the two forces. The free will of the enemy is provided by including all actions which he is capable of undertaking and which will affect the accomplishment of the mission.

parison of the results to be accomplished by the courses of action rather than the courses of action themselves. The matrix suggested by the theory of games provides a convenient method of comparing the results to be achieved by the courses of action. Criteria other than promise of success may be used in making the decision, but only after the minimum necessary assurance of success has been achieved.

## AUTHORS

Authors submitting materials to the MILITARY REVIEW are requested to forward manuscripts through the Magazine and Book Branch, Public Information Division, Department of the Army, The Pentagon, Washington 25, D. C.

# LET'S SHAKE UP THE MEDICAL TROOP LIST

Lieutenant Colonel Douglas Lindsey, *Medical Corps*  
Army Medical Service Board, Washington, D. C.

*Reducing the . . . troop list is at best  
a disagreeable job. (Field Manual 9-5,  
Ordnance Service in the Field)*

*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

I HAVE turned to Ordnance (a close colleague of Medical in the profession of maintenance of military machinery) for a restrained but open acknowledgment of the pangs that every troop planner has felt.

A pessimistic text has been deliberately chosen. An ideal troop list is easy to write, but it takes a great amount of pencil-chewing and soul-searching to develop a workable troop structure within the inevitably low (and still-lowering) ceilings that the troop planner must expect; particularly the service troop planner. Even the technical zealots agree that service is provided to the arms; but more important, service is provided *for* the arms—here the acceptance may be less general and less enthusiastic.

In two of our past three wars the pressure of demand for combat troops has resulted in an uncomfortable shortage of service troops in the field armies involved. In World War I the basis for the shortage was the great cry of our allies for *combat*

forces. Some service units arrived there early; the first casualty was a Medical Corps lieutenant named Fitzsimons, for whom the hospital in Denver was named. But for a long time the American Expeditionary Force was significantly short of balanced service support. If we had it to do over, would we have sent more hospitals and fewer divisions?

In Korea the service troop shortage was the result of the many peculiar aspects of that conflict—a limited effort, only one facet of a global political-military struggle. Should we have stripped the Seventh Army in Europe of tactical medical units to support the Eighth Army? Would it have been reasonable to ask Eighth Army to inactivate a battalion of artillery in order to obtain spaces for an evacuation hospital? No, the service troop planner will never get all the spaces he thinks are needed. His answer to a stringent troop limitation is not to proclaim that the job cannot be done for it is not the medical service or the ordnance service that suffers from inefficient service. The service is operated *for* the combat arms, and the service troop planner's duty is to advise the commander as to the *effect* that the limited service may have on the performance of the commander's *combat mission*.

It is evident that the medical service

faces an even greater load in the event of nuclear warfare. Like all arms and services, medical must face up to the difficulties imposed by wide dispersion and great mobility; it must have a troop list which permits decentralization of responsibility to subelements which are functionally balanced and self-sufficient; medical must maintain an organization with the flexibility and reserve to absorb losses and still continue the work. Even beyond all this, however, medical faces the job of salvage and maintenance of far greater numbers of wounded than has been the experience in the past. And here medical is unique—we cannot compensate for greater losses by stockpiling replacement items and spare parts.

#### Get Best Performance

One answer is to increase the proportionate medical troop strength. I am not optimistic enough to feel that this will ever be done to any significant degree. The other answer is to get the best performance out of the strength we now have allotted; there I think we can make some progress. Although possibly adequate in gross numbers of personnel, our present type field army medical troop list is awkward and uneconomical in its structure, and unsuited to the demands of nuclear warfare. *The time has come to shake up the medical troop list.*

The experience in Korea has given us

is classified, but the figure is not of direct comparative interest since Eighth Army was not a "type" field army. But if we project Eighth Army and its medical troop list to the theoretical level of what it might have been as a *type* field army, we come up with a medical proportionate share of the strength which would total less than 6,000. Such a medical projection is shown in column B, Figure 1.

#### "Got Away With It"

If you grant that the medical service of Eighth Army did a creditable job (a quite modest way to put it), then it is obvious that Eighth Army "got away with it" on only a half-ration of medical troops. Then why the injunction for caution in digging out from Korea some new lessons in how to economize in medical troops? If Eighth Army did the job, and did it well, with the equivalent of 6,000 medical troops, then why does the hypothetical Thirtieth Army need 13,000? In some respects Eighth Army "got away with it" with no trouble at all. It proved in action some of the medical organizations which were developed after World War II. It proved the feasibility of effecting soundly economical reductions in certain personnel and units. In respect to evacuation hospital beds and in ambulance lift, certainly claim cannot be made that there was no anxiety in Eighth Army. The tight restrictions in these two assets caused the medical regu-

***Although possibly adequate in personnel, our present type field army medical troop list is awkward, uneconomical in structure, and unsuited to nuclear warfare. Now is the time to shake up the medical troop list***

some valuable data which must be circumspectly applied. The present type field army troop list includes about 200 separate medical units that total over 12,500 personnel. In comparison, Eighth Army near the end of the conflict in Korea had only 70 separate units. The actual strength

lator to lead an exceedingly tense and anxious hand-to-mouth existence. One airfield was weathered in for 10 consecutive days, and it took every ambulance in a corps to carry the casualty load generated in a "quiet" tactical situation. In a coordinated advance against consistent heavy re-

sistance, Eighth Army would have run out of ambulance support in 40 miles. A single determined Chinese attack against a regimental sector filled every operating room in Eighth Army except one; think what a single nominal atom bomb against the main line of resistance could do!

The type field army of the future cannot depend on continuous air superiority; it cannot depend on a forward rail net; it may not have a secure base like Japan to fall back on for logistic support.

The Thirtieth Field Army must be prepared to take care of itself. It will need 12,000 or more medical troops. It will need units of such type and number as to permit a distribution to furnish balanced medical service in several isolated areas of independent tactical action. It will need enough medical command units to control and integrate the medical service effectively. But Thirtieth Army does not need all of the medical units now on the type troop list. It needs more of some, less of others, and a few which are not on the list. It desperately needs a reorganization of the command structure and functional relationships of the medical units it obtains.

At the present time the medical units of the type field army fall into such command groupings that 78 of them (excluding 10 dental units) may report directly to the army commander. The commanding general of the army obviously has quite

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enough to do in directing the activities of the three corps and other major units.

The Army Adjutant General already creaks under the load of "retail" administration for headquarters and special troop units. The Army Quartermaster is fully occupied with army-wide supervision of quartermaster technical activities; he can ill spare the people and time to be an "operating" food service and supply man for a vast and farflung army service troop household.

We need to remove the army headquarters from the petty details of housekeeping, but I cannot agree that the answer is to lump these 78 medical units along with other service elements into an "Army Support Command." I think we have misjudged the direct importance of logistics, and underestimated the depth and breadth of vision of our future army commanders if we seriously propose that all service support should be packaged and segregated as if it were a malignant process to be tolerated and controlled, instead of *used* as an *integral* part (*not* "in cooperation with") of the means to the end of success in the combat mission. In my opinion the army commander of today and tomorrow is still specifically interested in *gasoline*, or *demolitions*, or *health*; he will not be satisfied with a general answer to the general question: "How is the pulse of logistics today?" We must give him the immediate advice of technical specialists, but keep the detailed administration of technical operations out of his hair. Let us put the operation of the field army medical service under one man.

To be sure, the army surgeon usually has "operational control" over the medical units of the army—whatever that term means. The United States Army would be measurably better off if "operational control" had never been whispered aloud, had never found its way into print, had never suffered the attempt to define it. Operational control means that whoever has

## MEDICAL TROOP LIST

	A Thirtieth Type Field Army (CGSC 1956)	B Eighth Type Field Army (Korea 1952-53)	C Fortieth Type Field Army (? 1960)
"Army Medical Command"	*	1 (#)	1
Group Headquarters	3	(1) #	4
Battalion Headquarters	9	4	5
Surgical Hospital	12	12	—
Evacuation Hospital (400 bed)	12	4	—
Evacuation Hospital (750 bed)	3	—	—
"Army Hospital (400 bed)"	*	*	24
Convalescent Center (1,500 bed)	3	—	1
Ambulance Company	15	9	15
Clearing Company	9	4	9
Holding Company	3	2	4
"Litter" Company	3	1	3
Helicopter Ambulance Detachment	6	(12) @	—
"Helicopter Ambulance Company"	*	2 @	4
Psychiatric Detachment	4	2	4
Professional Service Headquarters	1	—	1
Surgical Detachment	24	—	12
Neurosurgical Detachment	3	3	4
Orthopedic Detachment	6	—	—
Thoracic Surgical Detachment	6	—	—
Maxillo-facial Detachment	3	—	—
Shock Detachment	12	—	—
Gas Detachment	4	—	—
General Dispensary	%	4 (%)	—
Medical Dispensary	8	—	—
Medical Detachment	20	16	—
Medical Intelligence Detachment	4	4	4
Medical Field Laboratory	1	1	1
Medical Illustration Detachment	%	1	1
Medical Depot	1	1	1
Preventive Medicine Company	3	3	4
Dental Service Detachment	8	4	? 8
Dental Prosthetic Detachment	2	2	? 2
Veterinary Food Inspection			
Detachment	4	4	? 4
Veterinary Hospital Detachment	%	—	1
TOTAL			
Troop Spaces (Approx)	12,500	5,700	12,500

\* No current Table of Organization

# Reinforced Group Headquarters functioned as Army Medical Command

— Not available in EIGHTH Army

— Not needed in future field army

④ Not in current type field army troop list

@ Detachments functioned under provisional company organization

Figure 1.

such control has responsibility for the failure of the performance of the primary mission of a unit, but has no command jurisdiction over the unit and no responsibility for or authority over the administrative and logistical details which may add up to failure or success. Evacuation of patients is the operational mission of an ambulance company; it is inseparable from the details of fuel supply and motor maintenance. Medical treatment is the operational mission of a hospital; it is inseparable from the details of food and shelter.

Yes, the army surgeon has "operational control." He has the responsibility, but he does not have that cold authority of command which goes far beyond the very firmest declaration of "operational control." Let me quote some examples:

The army inspector general investigates certain discrepancies in funds at a medical depot. The implications and ramifications of this investigation bring out that "the administration of this unit clearly indicates a lack of higher command supervision." Who gets the rap on the knuckles? The commanding general of the army is the next higher commander! The army surgeon has "operational control"; he has neither the means nor the authority to accomplish detailed administrative supervision of 78 different units and headquarters.

An army ordnance inspection team reports that the state of maintenance of the vehicles of a medical laboratory indicates a clear-cut dereliction of higher command supervision. Who takes the rap? The army commander is the next higher commander. The army surgeon? Then who is available in the medical section of army headquarters to carry out the necessary inspections and followup? And just where does this fit into the normal concept of technical service "operational control"?

These are practical examples based on actual experiences. They are typical of

the administrative burdens that add up to a topheavy-field army headquarters.

### New Command Structure

What we need is a command vehicle for the army surgeon. We need a brigade headquarters. If you prefer to reserve the term "brigade" for combat formations, then how about an "Army Medical Command"? Figure 2.

Such a command would not be expensive in troop spaces and would more than pay its way in the better utilization of medical troop units. It would absorb some of the operating functions of the personnel, preventive medicine, supply, and operations divisions of the present army headquarters medical section; it could take over a few of the spaces that go with those jobs. It would leave the medical section with a busy staff job, and the people to do a staff job without the headaches of day-to-day operations. It would give the army surgeon the means and authority of command over medical operations in support of his commanding general. All field army medical units would be assigned to one headquarters, from which come promotion, transfer, criticism, and commendation, "FOR THE COMMANDER."

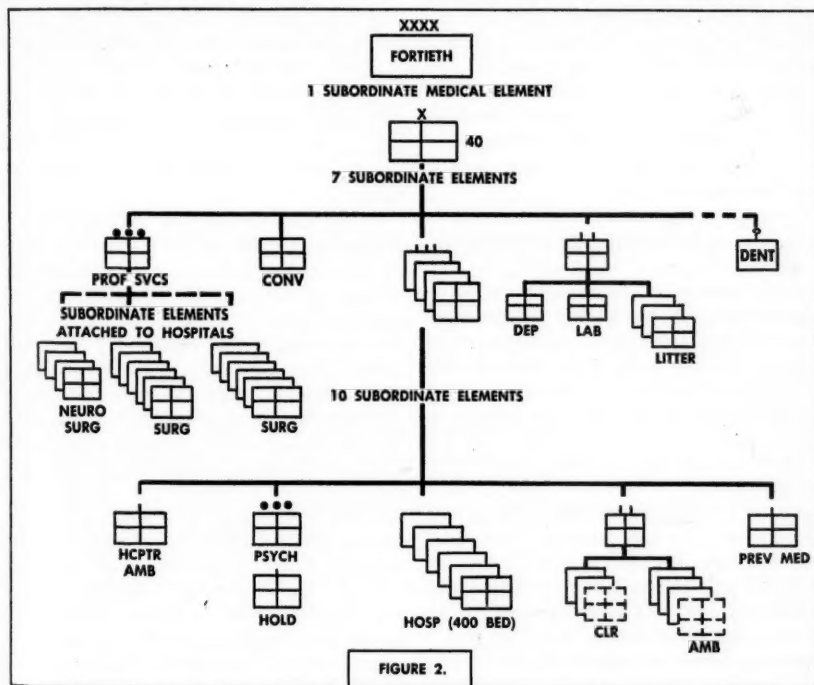
There would be further decentralization within the medical command. Not only is it impossible for the army commander to directly control 30 separate hospital commanders—it is impractical for the army surgeon to do it. Hospitals should come under command and control of medical groups, just as do other medical units which are involved in the common effort to care for the casualties of the field army. There will be no loss in flexibility or coordination of bed spaces; patients can be shifted between hospitals of two groups more easily than hospitals can be moved, but if it is necessary to move hospitals between groups, it can be summarily done by TWX from the medical command headquarters.



Our combat zone hospitals could well be reorganized, for with the advent of the helicopter and the dispersion forced by nuclear weapons the *basis* for the distinction between the surgical hospital and the evacuation hospital is disappearing. I believe we can whittle away at the present 400-bed evacuation hospital and make it lighter, more mobile, and somewhat more austere, but still rated at 400 beds. Such

(per bed) for sustained patient flow. We would gain markedly in flexibility in support of nuclear warfare. Instead of 12 surgical hospitals tied closely to 12 divisions and backed up by a line of 12 evacuation hospitals, we could checkerboard 24 or more hospitals of interchangeable type over the entire army support area.

This, then, is the proposed medical troop organization for the new type field army



a unit would be capable of assuming the typical functions of both the surgical hospital and the evacuation hospital. If we abandon all the surgical and evacuation hospitals of the present type troop list, we can "buy" a larger number of these scaled-down 400-bed units for the same number of aggregate troop spaces. We would gain more beds for emergency use, although they would not be quite as well staffed

(Figure 1, column C). Shall we say the Fortieth Type Field Army to distinguish it from the Thirtieth of Command and General Staff College model?

The army surgeon commands all medical troops not organic to subordinate commands. He may retain direct control over the lone convalescent center and, perhaps, a few other special units. He has concurred heartily in giving back to the ordnance,

engineer, and quartermaster battalions the medical detachments which they lost some years ago to set up the complicated hodgepodge known as "area medical service"; nearly 30 small units are gone from his troop list and are back under the commanders they directly serve.

Except that the army surgeon may maintain direct control over the single convalescent center, or a few other special units, he deals directly with only four subordinate commanders. To the group commanders he has given both hospitals and units to collect and distribute patients. To each of these commanders he gives a mission, a responsibility, the necessary authority, and the means to accomplish a broad evacuation task.

The typical group might include 6 hospitals, a preventive medicine company, and a medical battalion of ambulance and clearing companies. Although we have added hospitals to the group commander's responsibility (he does not have them now), I feel the troop list requires only one additional group. Further, there is no real need for 4 of the 9 medical battalions now on the list. A *service* group or service battalion can readily control 8 or 10 elements whereas a *tactical* headquarters might be overburdened with that many subordinates. In the present type field army troop list we have gone overboard in providing a separate battalion headquarters every time 2 or 3 companies are joined together. Of the 9 medical battalion headquarters now on the type troop list, 3 are proposed as necessary to control battalions of strength (less the headquarters detachment) of 210 men.

It is difficult to budget in ambulance units. No matter how many you obtain, they are not enough in a major disaster; we simply have to depend on improvised and general purpose transportation in emergencies. We do not like to get more than we need for "normal" use. An idle ambulance company is a frustrating or-

ganization. You cannot use it to supplement the Red Ball Express; and you cannot hope that business will pick up enough to snap them out of their doldrums. The figure of 15 ambulance companies is simply a compromise opinion.

The clearing companies are essential. Holding companies were a dull failure as casualty *holding* elements, but they make an ideal base for a neuropsychiatric center.

I do not believe that either Korean Service Corps laborers or the helicopter have yet obviated the need for litter bearers.

The organization of medical helicopters into small detachments is wasteful; a company provides major savings in personnel and matériel and improves operational efficiency.

A professional service headquarters is probably of value as a "permanent home of record" for such surgical detachments as are on the troop list. I am not firmly convinced that 12 surgical detachments is the most reasonable number; I could defend 24 or none just as well. Personally, I have found it preferable to give each of the hospitals an adequate *permanent* staff and move patients to operating tables instead of operating tables to patients. The neurosurgical detachment is essential. A well-trained surgeon will, with proper confidence and professional efficiency, undertake to treat a patient with multiple wounds. He will apply a hip cast, cut out a section of bowel, or bridge a gap in an artery with equal dexterity. But he seems to balk on the proposition that a general surgeon can or should enter the cranium. The remaining professional detachments on the old type troop list can be discarded. The shock detachment is an anachronism; shock is the province of every surgeon and the treatment of shock cannot be separated from the treatment of the patient and his wound. The other detachments may be useful in specialty centers in the communications zone but have no place in the field army area.

I still think that the helicopter has not rendered the mule obsolete, but very few others appear to share that opinion. The single veterinary hospital unit in the proposed troop list is only for dogs. It seems that in Korea the dog handlers were offended when we were reluctant to evacuate dogs by helicopter and admit them to surgical hospitals.

The proposed troop list for the Fortieth Field Army calls for just under 12,500 men in medical units—no more than in the present Thirtieth Field Army, in spite of the heavier medical burden that the Fortieth will presumably face in future warfare.

Is it enough? I doubt if we really could use more group or battalion headquarters, or more laboratories and depots. Surely 30 (or more) hospitals would be better than 24. Surely we will run short of ambulance transportation after heavy attacks with nuclear weapons. But the question of a bigger slice out of the fighting strength to be used for conserving fighting strength is a decision for command.

Is it enough? I do not know. But I know that it will give the Fortieth Army a more flexible, more capable, more efficient, and, most important, a *more effective* medical service than the Thirtieth Army now has.

Let's shake up the medical troop list!

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The MILITARY REVIEW has the mission of disseminating modern military thought and current Army doctrine concerning command and staff procedures of the division and higher echelons and to provide a forum for articles which stimulate military thinking. Authors, civilian and military alike, are encouraged to submit materials which will assist in the fulfillment of this mission.

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# Hold the Power and Bear the Responsibility

Captain Theodore J. Lepski, *Infantry*  
28th Infantry Regiment, 8th Infantry Division

*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

A YOUTHFUL group of eager but unsuspecting cadets solemnly inspected the weather stained statue of General George S. Patton as it stands so stolidly and silently on a granite pedestal in front of the library at the United States Military Academy.

At precisely the same time General Patton stood before the bulletin board in the Officers' Club at Fiddler's Green. He noted an order thereon directing him to appear before the board of governors immediately. The directive was signed ALEXANDER THE GREAT!

The vast membership of the Officers' Open Mess at Fiddler's Green is most inspiring and is well known to all students of military art and science. The evolving history of the world has been written to a large measure around the fabulous exploits of its members.

It is said that there are NO dues—drinks are FREE—the single initiation requirement is to have been a soldier of honorable reputation. Few club rules are necessary and the general atmosphere is one of mutual respect even though many of the members waged bloody campaigns against each other some days or eons ago.

The board of governors is composed of some of the world's great captains and illustrious military leaders whose principal responsibility is to decide upon the membership of the Military Hall of Fame. Although their task is most difficult and time consuming, the prestige and sound judgment of the board members have proved infallible. Even here at a soldier's resting place, "responsibility walks hand in hand with capacity and power."

Quite understandably, they have reached objective areas of agreement in the principles of leadership, primarily due to their long association in the best of military company. The board is dynamic in its approach to this subject, seeking at every opportunity to test the validity of its conclusions.

They are presently engaged in a project to determine the importance and pertinence of the following principles of leadership:

1. Seek responsibility and develop a sense of responsibility among subordinates.
2. Take responsibility for your actions regardless of their outcome.

Frederick the Great has been appointed project chief, and the other members of the group detailed are:

Julius Caesar

Hamilcar Barca

Napoleon Bonaparte

George Washington (recorder)

Alexander, chairman of the board of governors, has liberally consented to al-

low the leadership group to sit jointly on a proceeding, about to begin, concerning the nomination of an American by the name of George Smith Patton to the Military Hall of Fame. The principals are in place. General Foch, master-at-arms, calls the room to order and the examination begins.

All members are duly sworn in the usual military manner. There is some discussion as to order of rank which is quickly ironed out by Alexander. Washington reads the order convening the board and prepares to make his opening statement.

"May it please the board," interrupts Patton's counsel, "the nominee respectfully requests to challenge Hector for cause."

Alexander momentarily frowns at this legal jibberish so recently introduced at Fiddler's Green and, after quickly checking his Special Regulations on procedure, directs counsel to present evidence.

Hector is called to the stand, is sworn, and Patton's counsel begins interrogation.

"Did you indicate your disapproval of General Patton to a group of club members just before this board convened?"

Hector frowned but replied in the affirmative.

"Explain to the board the reason for your remarks."

"In Patton's youth he often played games with his friends. Invariably, he assumed the role of Achilles and proclaimed that as such he was a superior swordsman

"No, sir."

"Then you should have challenged yourself," admonished Alexander. "You're dismissed."

Hector saluted the board and stormed out of the room.

"Proceed," directed Alexander.

Washington called General Patton to the stand.

Patton glanced at the members of the board. For the first time in his memory he felt overawed in the presence of this famous group. He rose and smartly saluted the board. The oath was administered.

Alexander angrily pounded his fist on the table and roared. "There is absolutely no need for the oath here. These people were all closely screened prior to their arrival. Let's get on with the matter."

"Your name, sir?"

"General George S. Patton."

"What were your last three assignments, General?"

Patton looked up at Washington in astonishment before he remembered the international timelessness of this place.

"Commanding General, United States Fifteenth Army; Commanding General, United States Third Army; Commanding General, United States Seventh Army."

Washington explained the objectives of the project and directed him to watch a film clip for the purpose of comment upon the actions and orders he observed.

Patton and the board leaned slightly for-

***Command responsibility is to be handled only by those who fear it not, but eagerly accept its burden. There remains no doubt that willingness to accept responsibility is truly the foundation of all leadership***

ward in expectancy. The projector flashed on and Patton immediately identified the picture to be a documentary film of the Sicilian Campaign during World War II. The screen portrayed Patton receiving a telegram from his commander, General

to Hector. Naturally this is untrue because. . . ."

Alexander intervened impatiently. "Your opinion is undoubtedly biased and obviously irrelevant. Do you have anything else to offer?"

ward in expectancy. The projector flashed on and Patton immediately identified the picture to be a documentary film of the Sicilian Campaign during World War II. The screen portrayed Patton receiving a telegram from his commander, General

Harold Alexander, directing him to take up a defensive position in the vicinity of Caltanissetta for the purpose of covering the left rear of the British Eighth Army attacking northward.

General Patton was visibly angered at the contents of the telegram and after a moment he called Generals Keyes, Wedemeyer, and Gay into his command post. Together they are shown drafting a plan for an enveloping attack to seize the town of Palermo. The film reeled on showing Patton flying to General Alexander's headquarters in North Africa where he presents the plan for approval. After some lengthy discussion with General Alexander, Patton smiles and finally departs on his return trip to Sicily. Succeeding scenes reveal Patton's entire force in a general advance which, after some severe fighting, carried them into Palermo.

The lights suddenly came on in the room and the projector was shut off. There was a moment of silence as if all present were off in far away places daydreaming of battle participation.

Washington cleared his throat and said, "Do you recognize the action, General?"

"That's my Seventh Army knockin' hell out of the Germans and Italians in Sicily," said Patton. Almost instantly he remembered the directive Washington had put out decrying the use of profanity. He glanced at Washington and nervously coughed. Faint smiles flickered over the

faces of the other members on the board.

"Explain your actions, General," said Washington in a sterner tone of voice.

Patton shifted in his seat and directed his remarks to the members of the board. "I have always felt that the cardinal principle of leadership is the complete acceptance of responsibility for the direction of my command toward purposeful, legitimate goals. Once I have accepted authority, I must accept accompanying responsibility. It is not sufficient to accept responsibility for a given mission only, but every effort must be made to seek responsibilities of the kind which enhance the value of my organization to the next higher command. In a crisis the true leader must be decisive in meeting the demands of a situation and prepared to assume unhesitatingly whatever additional authority is necessary to meet that situation. Guided by what I believe to be the intent of my superior, I am always prepared to assume full responsibility for my actions.

"I sincerely believed in this case that General Harold Alexander did not mean exactly what his directive implied to me. There was also the strong possibility that he was not fully aware of my tactical position. I, therefore, took the liberty to frame the course of action I believed General Alexander would have taken were he in a similar position. If an emergency existed, I would have acted without first taking the time to gain approval. Of course, I would also recognize my position in the matter of assuming the responsibility for the action."

The members of the board nodded in agreement. Alexander the Great inquired if there were any questions and Julius Caesar rose from his chair. He walked toward the witness, inspecting General Patton closely for several minutes. Finally, he asked, "What were you and General Alexander talking about in his command post for so long in the film, General?"

*Captain Theodore J. Lepski graduated from the United States Military Academy in 1946. After a tour in Japan with the 1st Cavalry Division, he was assigned to the 11th Airborne Division. He served as a rifle platoon leader and heavy weapons company commander with the 187th Regimental Combat Team in Korea. Following completion of the Advanced Course of The Infantry School, and a ROTC tour at Rutgers University, he graduated from the Regular Course of the Command and General Staff College in 1956. He is now assigned to the 28th Infantry Regiment, 8th Infantry Division, which is gyroscoping to Germany.*



Patton replied, "I was explaining the situation to General Alexander and pointing out the various elements of my proposed operations plan."

"Was that all?" said Caesar.

"There was one other matter discussed. General Alexander stipulated that my attack be a reconnaissance in force."

"Reconnaissance in force, General!" exclaimed Caesar. "If I remember the film correctly, I saw at least the equivalent of two divisions. Will you explain that?"

Patton grinned a little as he remembered the situation and said, "I committed all the troops I had available at the time, sir. If the attack had failed, I would have been relieved."

Caesar pondered the answer for a moment, then walked back to his seat asking, "How did the campaign turn out, General?"

A German general sitting in the spectator section stomped out of the room and slammed the door.

"Disregard that last question," said Caesar. "No further questions."

Washington then directed Colonel Jomini, court clerk, to read a passage from a document entitled, "Sicilian Campaign, 1943":

*During the advance on Messina, along the north road in Sicily, we had made one successful amphibious turning operation and were in the act of executing a second one when, shortly after supper, General Keyes, who was with the 3d Division, telephoned me that General Bradley, commanding the II Corps, of which the 3d Division was a unit, and General Truscott, commanding the 3d Division, were both convinced that this second amphibious operation was too dangerous and therefore requested authority to postpone it. I told General Keyes to tell them it would not be postponed and that I would be there at once.*

*I took General Gay with me, dropping him off at the beach where the amphibious*

*troops were then taking off, with orders to see that they took off. I then went to the Headquarters of the 3d Division, which was under limited shell fire, and found General Truscott, a most dashing officer, suffering from such physical fatigue that he was convinced that the operation could not succeed. I directed him to carry it out, stating that if he succeeded he would get the full credit, and that if he failed, I would take the blame. I then called General Bradley on the telephone and told him the same thing. I stated to both of them that, having complete confidence in them, I was returning to my Headquarters, because if I stayed around I would fail to show confidence.<sup>1</sup>*

The next morning I received word that the attack had been a complete success.

General Washington broke in on the narrative at this point and thanked Colonel Jomini. "General Patton, do you recognize that résumé?"

"Yes, sir, I do. That is a quote from my diary."

"Exactly," said Washington. "Will you comment further upon the reasons for your action here?"

General Patton began by saying, "It is a very difficult thing to order two officers in whom you have great confidence to carry out an operation which neither of them thinks possible.<sup>2</sup> I was almost compelled to direct the second amphibious turning operation personally, but I decided against that course of action. I have always felt that the delegation of responsibility as well as its acceptance requires a secure relationship with one's subordinates and senior. That secure relationship is based primarily on the mutual trust and confidence each has for the other. I realized that both Generals were very tired, and that accounted for their pessimism. It was my responsibility to stimulate their desire to continue to contribute to the

<sup>1</sup> War as I Knew It, George S. Patton, Jr., Houghton Mifflin Co., p 380.

<sup>2</sup> Ibid.

over-all operation. If I took the task myself, I certainly could not have properly fulfilled my responsibilities of the army commander, nor would I be properly developing my subordinates."

Hamilcar Barca listened in earnest as his mind went back to the First Punic War. He remembered vividly his occupation of Messina and the ensuing battles with the Roman Legions sent to oust him from Sicily. His mental reconstruction was so realistic that he began talking to himself, and was heard to murmur, "If only I had used young Patton's trick of amphibious envelopment, I'd have defeated the Romans, I'm sure. . . . My boy (Hannibal) wouldn't have had to cross the Alps to destroy Rome. . . . By Zeus—it would have been Carthage, and not Ro. . . ."

"Hold!" spoke up Caesar, who overheard the monologue. "You fail to reckon with the Roman Legionnaire. He. . . ."

"At ease!" bellowed Alexander. "This is no time or place to fight your mythical campaigns. Get on with the show, George."

Washington bade Patton continue his explanation.

"I was certain," continued Patton, "that the Germans were on the run. If I could prevent them from getting set, as they could easily have done (given several hours of freedom), I would be able to finish them with little cost in soldiers' lives. I have studied all of your campaigns, and I felt certain that the calculated risks you took in similar situations proved to be the decisive factor in achieving victory at the cheapest price in lives."

Patton looked into the ageless face of Napoleon, and asked, "Did you once say, 'At the beginning of a campaign, to advance or not to advance is a matter of grave consideration; but when once the offensive is undertaken, it must be maintained to the last extremity. Because retreats always cost more men and material than the most bloody engagements—with this difference—that in a battle the en-

emy's loss is nearly equal to your own, whereas in a retreat the loss is on your side alone?'"

Napoleon nodded, and a smile of recognition lighted his features at the repetition of one of his old maxims. Before he could comment, however, there was a slight commotion in the rear of the room. Marshal Vandamme rose exclaiming, "Then why in hell didn't you pursue Schwarzenberg after defeating him at Dresden in 1813? If you hadn't been so damn interested in Josephine you could have destroyed him in pursuit. But no . . . you let him retreat at leisure allowing him to surround my force at Kulm where he nonchalantly transferred only 20,000 of my soldiers to Fiddler's Green!"

Napoleon's smile turned to a scowl. A shadow of regret momentarily crossed his face. He rose and directed Marshal Foch to escort Vandamme from the room. As the two departed, Vandamme turned, and pointing his finger at Napoleon he shouted, "It was your responsibility, *mon General!*"

A tense atmosphere gripped the room. In a moment Alexander turned and in a loud voice said, "How successful were you in the pursuit of Mademoiselle Josephine, *mon General?*"

The soldiers howled in glee as Napoleon squirmed. Washington quickly bade Patton to continue. "I was prepared to assume full responsibility for that second amphibious force if they were defeated. It has always occurred to me that my authority to direct held me responsible for results if not by my commander, then certainly before God. The full impact of this fact is the worst burden of all."

Patton fell silent as he reflected upon the events that transpired during his judgment before he was sent to Fiddler's Green. Although he had honestly felt that he had made every effort to prepare for his leadership role in life—plunged every last effort and energy into each mission, he was shocked at the balance sheet shown

him revealing the lives expended in carrying out his directives. Perhaps I was too lax—maybe I should have been more relentless.

Washington broke his introspection with his question to the board. "Do you desire further interrogation?"

"Apparently not," replied Alexander, as he looked up and down at the members of the board.

Jomini had prepared complete records of Patton's campaigns and had sent them to the senior tactical review board where they were studied and criticized as only a senior tactical review board can. Results of the examination were then submitted in evidence.

Alexander asked Frederick if he had any more witnesses in connection with his project. If so, he would be permitted to examine them now and be able to take advantage of the merits of any additional help the board of governors might provide.

Frederick directed Washington to proceed.

"Gentlemen, there is a witness who is well qualified to testify, but who is not present. I have caused an exhaustive search to be made of all Forms 66 on officers recently assigned and joined to determine the availability of personnel who have had close relationship with the absent witness. One officer now present is prepared to testify for the absent officer subject, of course, to your approval."

"This is most irregular, General Washington. Ordinarily I would not allow this sharp break in precedence, but if it will tend to clarify issues now before this group, you may proceed."

General Washington recalled Patton to the stand. After he was seated, Washington began to question him. "General, your records indicate that you have been closely associated with General Dwight David Eisenhower for many years of your active career. Is this true?"

"That is quite true," replied Patton. "What is your opinion of him, General?"

"I know General Eisenhower to be a most outstanding military leader of unquestionable character and ability."

"Will you draw upon your recollections and furnish the board with some examples of his leadership and techniques? You realize, General, that you do not have to bring up any information which would prove unfavorable to you."

Patton instantly shot back, "Sir, I have absolutely nothing to conceal from this, or any other board or court. Furthermore, I resent any implication that I might be withholding information from this board."

Alexander cautioned Washington and directed him to phrase his questions in such a manner as to indicate the court's complete faith in the veracity of the witness. Washington apologized, and Patton, still somewhat disgruntled, went on with his statement. "As a Colonel, I commanded a tank brigade in France during World War I. General Eisenhower, at that time a captain, was placed in command of a tank training center in the United States. It was unusual for an officer of that grade to be given an assignment of that importance and responsibility. About 30,000 recruits were sent to his installation for tank training. Ike, as we affectionately referred to him unofficially, built that camp from barren ground into an efficient training center—a model for any other center to follow. The support given him was practically nonexistent at first and circumstances were extremely trying. Beside that, he was issued one tank with which he had to train that large body of troops. Nevertheless, he undertook the job with commendable success. The replacements he sent overseas to me were so well trained that it took a minimum of time to orient them in the operation of the vehicles in my command before they were committed in combat.

"When the war was over we were assigned to the same station and my impression of his capabilities was confirmed. He expended prodigious energy in study and analysis of the campaigns just concluded, striving to find solutions to the problems. He constantly drove himself to be prepared adequately for command should he be given the opportunity in the future.

"I believe that the mark of a leader is directly proportional to his effort and energy applied in prior preparation for possible assignment to high positions of great responsibility. Pleas of ignorance have never taken responsibility away.

"His preparation was not in vain. He was assigned the tremendous responsibility of organizing and leading the Allied forces in World War II. By that time he had surpassed me in rank through his great talent and organizational capability.

"To him fell the task of uniting all Allied effort."

During Patton's opening remarks the Duke of Marlborough slipped into a vacant seat in the rear of the room. The old campaigner listened with increasing interest to the remarks about uniting Allied efforts. Before he knew it, he was lost in the swirling reminiscences of the countless obstacles that faced him during his command of the Grand Alliance during the Queen Anne's War. Old wounds ached as he recalled the petty bickering and political machinations that ultimately lost him his command. One thing quickly reminded him of another—Lille, Ghent, Blenheim—where he finally defeated Tallard. . . . Gibraltar belonged to England! He speculated on the political importance of that acquisition already proud in the realization of its military and naval importance. His reeling mind slowly spiraled back to hear Patton's high voice describing a man who met and solved similar problems and trod the same battlefields.

"During the early days of our campaign

in North Africa, Ike was beset with political entanglements as well as military problems. If the campaign were to go rapidly and successfully, every effort had to be made to gain early French assistance."

An old French war horse of Verdun fame visibly stiffened as Patton described the chaos of politics that persisted in those trying days. How well he, Pétain, remembered the political embroilments that led to the *humilites* he suffered in the twilight of his professional career; the Axis *heel* poised to *rape* all of his beloved France, his promises to defend the territories or suffer complete occupation. . . . A desire to grasp hands with the allies and shake off the yoke—Liberty, Equality, Fraternity, RESPONSIBILITY. . . .

Patton's voice grew angry as he continued. "The political situation was being handled by the State Department within its own channels without timely notification of its actions or decisions being given to Eisenhower. When the situation, as Ike saw it, demanded that the solution was to work through Darlan, he became the scapegoat in a political scramble vastly exaggerated by opportunists the world over. When pseudo-officialdom, in the guise of American and foreign politicians, aided by newsmen, jeopardized his position, he demonstrated his great capacity for assuming responsibility. What prestige he may have inadvertently lost through his initial, real politico-ineptitudes was more than transcended by his military brilliance and extraordinary facility in achieving unity of the various nationalities within his command. The very fact that he made no effort to shift this responsibility or plead ignorance of the details over which he had little control is signal proof of his loyalty and capability of accepting the responsibility for his own sincere decision."

News had quickly spread to the Tap Room of the club that a newcomer was being examined. A bewhiskered old soldier downed his drink at the bar and walked

over to the board room. General Grant was shown to a seat beside General Pershing, who filled him in on what had already transpired. Pershing's regard for General Patton had grown steadily since they both had served on the Mexican Border together. When the tumult of World War II boiled over, old Black Jack was forgotten by everyone except Patton. The memory of that farewell salute by young George at his bedside still brought a tear to his eye.

Patton's voice went to still higher pitch as he continued. "Ike learned his lesson quickly. He wasn't to be hamstrung in the same political snare again. His adroit handling of the political implications involved in the liberation of Paris as well as the problems inherent in the smooth handling of the chain of command during the European campaigns contributed immeasurably to the solidification of the Allied effort. If I were a politician, I'd seriously consider him presidential timber."

Grant and Washington winced at the thought. As one they considered the vast chasm between the handling of military affairs and guiding the intricate complications of democratic processes of government.

Alexander the Great, Caesar, Frederick, Napoleon—many of the others instantly contemplated upon the wisdom of a professional soldier undertaking such tremendous additional responsibilities; but even they were unaccustomed to democracy and its ponderous ways.

Patton's voice went on. "When I became enraged at a young soldier for what I believed to be malingering during the Sicilian Campaign, I struck him in the face. The repercussions were again way out of proportion to the incident and placed Ike in a terribly compromising spot. I earnestly believed that my responsibilities to the individuals who lay in the hospitals and to the others who daily flirted with death on

the battlefield demanded drastic positive action to prevent malingering in any and all of its dirty manifestations.

"Ike must have realized my true motives. Aside from a strong letter directing my public apology and pointing out the bungling error in my procedure, he kept me on the team. The pressure of Army morale and public opinion was enormous; but he still stood up for me. His ruthless dismissal of incompetents and disloyal elements was more than balanced by his sometimes reckless loyalty to the subordinates he sensed were conscientious, capable but human.

"He was able to stimulate his subordinates to great efforts. They felt disheartened if they realized that their results were letting him down. Here is the essence of the principle of delegation.

"In delegating enormous responsibilities to his senior commanders, Ike never shifted blame upon them when he was under fire for results. At the same time, he granted maximum freedom of action to those subordinates, even when the action was critical. The endless ramifications of protocol—which nationality should command and who and where they should fight—consistently focused hypercritical world opinion on his decisions.

"He discreetly maintained control and made the important over-all decisions. His reactions were wise and immediate; he exuded supreme confidence, even though he inwardly quaked at the enormity of consequence incident to some of those decisions."

The old campaigners were lost in the vivid memories of the awesome trials and tribulations visited upon them as a result of their appointments to positions of responsibility. Many remembered the secret desires and momentary wishes for the peace and complacency of anonymity—the flashes of temptation to turn their backs and let the situation carry itself . . . and be damned.



But as they remembered the successes because of redoubled efforts during those trying times when order was brought to chaos, their shoulders straightened, and the pride of a soldier's accomplishment surged up within. The leaders thrive on responsibility—followers avoid its terrifying effects.

No one realized for a moment that Patton had concluded. All in the jampacked room were silent in happy reverie of the excitement of the old days. Suddenly, Alexander straightened and asked, "Have you anything else, General Washington?"

"Not at this time, sir."

Alexander called a recess and the board retired to consider the records and testimony presented by General Patton. The members of the leadership project conferred to determine the impact of Patton's remarks.

Several hours later the proceedings were reopened. The room was immediately filled with distinguished spectators. Generals Lee and Grant were deep in conversation when Foch called them all to attention.

The board filed in and took their seats. Alexander asked Frederick if he had a statement to make at this time. Frederick rose and read from a prepared document. "Disguised in the trappings of power, glory, and authority, command responsibility is a lonely, wearisome, and demanding curse. It is to be handled only by

those who fear it not, but eagerly accept its burden.

"Look for leaders among those who seek responsibility and diligently prepare to undertake it.

"Develop the sense of responsibility in subordinates to prepare them for greater capacity.

"Delegate authority—if you don't, responsibility will soon grow so heavy that you will fail to properly discharge it or break under its onerous effects.

"There remains no doubt that willingness to accept responsibility is truly the foundation of all leadership.

"The principles: Seek responsibility and develop responsibility in subordinates; and take responsibility for your actions, regardless of their outcome, are valid and pertinent principles of leadership."

Alexander agreed with the committee's findings and then directed General Patton to stand before the board.

Patton's heart beat faster; there was an imperceptible quiver in his hands as he stiffly assumed his position in front of the board.

The cadets inspecting the statue of General Patton at West Point stared in disbelieving amazement at the bronze features . . . could it be . . . was the statue smiling, or was it just the optical illusion sometimes caused by the sun casting shadows over the metal and stone?

#### BIBLIOGRAPHY

General Omar N. Bradley, *A Soldier's Story*.  
General George S. Patton, Jr., *War as I Knew It*.  
General Dwight D. Eisenhower, *Crusade in Europe*.  
Harry H. Semmes, *Portrait of Patton*.  
Alden Hatch, *General Ike*.  
Kenneth S. Davis, *Soldier of Democracy*.

William B. Mellor, *Patton, Fighting Man*.  
Kevin McCann, *Man From Abilene*.  
Alden Hatch, *Red Carpet for Mamie*.  
Theodore Dodge, *Great Captains, Volume I*.  
Department of Tactics, United States Military Academy, *Principles and Techniques of Leadership*.  
*The Bible*.



# Atomic Impact on G1's Functions

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*The views expressed in this article are the author's and are not necessarily those of the Department of the Army or the Command and General Staff College.—The Editor.*

**A**LTHOUGH it is reasonable to assume that the same personnel functions will exist in an atomic war as were encountered in past warfare, problems pertaining to these G1 functions will increase in scope. These problems will result because all friendly, enemy, military, or civilian personnel who are located within the radius of damage of any atomic burst will be affected to some degree.

The primary purpose of this article is to point out some of the increased problems that will confront division, corps, and army G1's in an atomic war. The G1 at all echelons within the field army must engage in imaginative and realistic planning to offset the adverse effects of atomic weapons in order to ensure adequate personnel support for combat operations in the future. In some instances possible solutions to these increased problems are offered, while in others the problems are suggested as requiring further exploration and solutions prior to or during an actual operation involving atomic weapons.

*Strength reports.*—The personnel daily summary for the 24-hour period, from 1800 to 1800, is the normal strength report

used by a division G1 to convey the latest strength data of the unit to the commander, the staff, and higher headquarters. This report is used to furnish the strength figures needed for staff planning and command decisions. It has proved adequate during nonatomic operations in World War II and Korea. However, one effective atomic strike in a division area could drastically change the strength situation in a matter of seconds, and could cause this report to be temporarily useless. In order for G1 to be able to quickly provide current strength information after an atomic attack, he must immediately receive additional strength reports from affected units.

A rapid strength reporting procedure could be instituted by requiring in the personnel paragraph of the division standing operating procedure (SOP) a *flash* strength report to be transmitted immediately and then followed by an *effective* strength report from all units subjected to an atomic attack. This *flash* strength report should be submitted by the senior surviving member of the affected unit *immediately* following an atomic attack. The report should be transmitted through command channels by the most rapid means available and should provide, as a minimum, an estimate of personnel losses. Although not particularly accurate, this report would be quickly available and would provide the initial personnel information

***In an atomic war the G1's at all echelons must engage in imaginative and realistic planning to offset the adverse effects of atomic weapons in order to ensure adequate personnel support for combat operations***

needed for immediate decisions. It could also be used to implement the SOP administrative actions established for such emergencies.

The *effective* strength report should be submitted as soon as possible after the flash strength report and should list the actual effective strengths of units and loss of commander, if applicable. This report would require more time, but it would be more accurate than the flash strength report. Each echelon of command should require submission of both the flash and effective strength reports through command channels from units *two* echelons below. Thus an infantry division commander would receive a report on estimated losses of an affected infantry battalion immediately following an atomic attack, and soon thereafter would receive a report of its actual effective strength and, if appropriate, loss of the battalion commander.

The number of personnel surviving an atomic attack is *one* indication of the unit's combat effectiveness. Without this information the commander and staff could not arrive at sound decisions.

*Casualty reports.*—Accurate, prompt, and complete casualty reporting is of great importance. The casualty reporting system will be complicated by the large number of casualties resulting in a relatively short period of time from effective atomic strikes. Add to this problem the possibility of entire units being destroyed, and one can readily see that casualty re-

porting will be more difficult. However, due to its importance all means should be fully utilized to overcome the problem.

It would appear that a satisfactory solution to this problem must include emphasis on thorough indoctrination and training of *all* personnel in casualty reporting procedures. Each survivor of an atomic strike must be capable of rendering accurate casualty reports. Some situations may require that casualty reporting teams be furnished by higher echelons to assist in this task.

*Personnel loss estimates.*—Present procedures involve the use of loss rate tables based on experience. In an atomic war G1 must develop *atomic* loss rate tables, as soon as possible, based on actual losses experienced from atomic attacks. Available data such as weapons effects, enemy capabilities, status of training, and passive defensive measures should be used as a basis in making loss estimates until these tables are established. Anticipated loss figures will probably be far less accurate due to the additional unknowns and varying situations. For example, greater difficulty will be experienced in: Evaluating the enemy's tactical atomic capability in each situation (G2); estimating the vulnerability of units at the time of attack (G3); and establishing standard loss rate tables that will apply to the average atomic attack (G1).

To overcome these inaccuracies in loss estimates, replacement planning and support must be flexible to provide adequate individual and unit replacements.

#### Replacements

*Individual.*—In an atomic war there will continue to be a need for large numbers of individual replacements in addition to unit replacements. However, the procedures followed to provide individual replacements should not be based solely on previous experience.

In the event of an enemy atomic attack

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causing losses which are not of sufficient magnitude to require replacement of an entire unit, early availability of individual replacements in large numbers would be of major importance. To provide these replacements promptly would require that replacements be habitually stocked in division replacement companies. This stockage allocation by branch and military occupational specialty (MOS) should be authorized by the field army commander based on loss rates experienced in each area. Since artillery position areas, assembly areas, and reserves will be likely targets for enemy atomic attack, this stockage would probably reflect a cross section of infantry, armor, and artillery MOS's.

A major consideration in providing individual replacements is the location of replacement installations, where possible, away from potential atomic targets.

*Unit.*—It is possible that many company and battalion size units will be decimated. On occasions even regimental size units may be destroyed. Reconstitution of these shattered units with individual replacements would be highly impractical.

Since entire combat units are likely to be destroyed in an atomic attack, unit replacement by battalion size units appears to be a sound solution. As a minimum, completely trained and equipped separate infantry battalions, armored infantry battalions, 105-mm towed and self-propelled and 155-mm self-propelled artillery battalions, and tank battalions should be available to theater army and capable of meeting the unit replacement requirements of the field armies on short notice. Experience may dictate that a certain number of these battalions be located in field army areas to expedite their employment. The number of each type of replacement unit initially located in theater army should be based on anticipated losses and eventually would correspond to theater loss rates and experience factors. The Zone of

Interior replacement training system must be geared to provide these replacement units to theater army as required.

Unit replacement poses some administrative problems, but these can be solved with adequate prior planning and use of unit SOP's. A problem would exist of ensuring proper integration of these units, but this is closely related to proper integration of individual replacements and the solution is quite similar.

Based on past experience, it is felt that the manpower resources of the United States will not be capable of providing unit replacement for all type units. Other means will be required to replace destroyed units not provided for above.

*Planning.*—There is a definite need for establishing additional replacement factors to assist in replacement planning in atomic warfare. Some factors required are a percentage personnel loss rate that:

A unit can sustain and still be combat effective. (In situations where losses do not exceed this loss rate, they should be replaced by individual replacements and the unit should continue in combat.)

Will render a unit temporarily combat ineffective, but the unit can be reconstituted and eventually returned to combat. (In situations where losses do not exceed this loss rate, they should be replaced by individual replacements, the unit should be removed from combat, and permitted time for rehabilitation by temporary employment of a replacement unit.)

Will render a unit permanently combat ineffective. (If losses exceed this rate, the unit should be replaced permanently by a replacement unit.)

With these factors available, G1 could more easily determine the type of replacement support required, as illustrated in the following hypothetical situations:

*Situation A.*—A frontline infantry battalion is subjected to atomic attack. Casualties and other losses are not in excess

of the percentage personnel loss rate deemed necessary to render the battalion combat ineffective. Individual replacements should be used to bring the battalion up to strength, and the unit should continue in combat with its division. If the situation permits, the battalion should be given time to assimilate replacements and rehabilitate.

*Situation B.*—A frontline infantry battalion is subjected to atomic attack. Casualties and other losses render the unit temporarily combat ineffective, but the battalion can be reconstituted and eventually returned to combat. The battalion should be replaced immediately by *temporary attachment* of a replacement unit to the division (separate infantry battalion) from theater army for the period necessary to rehabilitate the organic battalion. The affected battalion should be moved to the corps or army rear area, and be brought up to strength with individual replacements. The battalion should be rehabilitated and retrained under corps or army control, and when combat effective, rejoin its parent division. The replacement battalion should be relieved at this time and return to its replacement unit status in either the army or theater army area.

*Situation C.*—A frontline infantry battalion is subjected to atomic attack. Casualties and other losses render the battalion permanently combat ineffective. The battalion is replaced immediately by *permanent assignment* of a replacement unit (separate infantry battalion) to the division from theater army. The effective personnel remaining in the ineffective battalion should be absorbed within the replacement battalion or division by normal attrition. The replacement battalion should assume the designation of the ineffective battalion and its original unit designation should be disbanded. Theater army should be furnished a replacement unit (separate infantry battalion) from the Zone of Interior.

### Discipline, Law, and Order

*Discipline.*—Survival and success in atomic warfare will demand higher standards of individual and unit discipline than in the past. Atomic warfare will require that SOP policies and procedures be established and strictly observed to achieve maximum protection for all individuals, units, and installations. These SOP policies and procedures should include such things as:

- Minimum number of personnel in the open at any one time.

- Helmet and clothing worn properly at all times.

- Units dispersed.

- Troops and installations well dug in.

- Avoiding large troop formations and assemblies.

The response to these standing orders must be automatic and require minimum supervision. This restriction on movement and other troop activities will no doubt result in increased discipline problems.

The confusion, psychological shock, and possible panic resulting from an atomic attack on our troops will probably increase straggling and require additional control measures. This may necessitate relocating the current straggler line farther to the rear, establishing an additional straggler line, or increasing straggler posts and patrols.

*Law and order.*—Atomic shock may be an increasing reason (or excuse) for absent without leave, desertions, and self-inflicted wounds. The devastation on the civilian economy may increase smuggling, looting, and black-marketing activities. If these problems materialize, additional military police units may be needed in the troop basis.

All of these problems can be lessened, to some degree, by proper preparation of individuals and units for the atomic battlefield. This preparation must be stressed during activation and training and closely

supervised during combat. Good leadership, as in the past, will contribute most to the solution of these problems.

### Prisoners of War

Atomic warfare, particularly in offensive operations, will probably result in larger numbers of prisoners of war (POW's). G1 must ensure adequate provision for their care to include close coordination of the added logistical impact with G4. Many of these POW's will be wounded or suffering from shock, and more will require evacuation through normal medical evacuation channels than in the past. Some POW's may require decontamination prior to evacuation from the combat area.

G1 will also be faced with greater security and evacuation problems. POW's in large numbers could endanger the success of a unit's mission, or jeopardize its administrative support, unless kept under effective control. Prior planning for adequate security measures and continuous coordination of rapid evacuation will be necessary.

In order to conserve United States military manpower, more POW's will be needed on authorized labor projects, especially to assist Civil Affairs/Military Government activities.

### Graves Registration

Atomic warfare will produce more friendly and enemy dead, and many of these dead will be difficult to identify. On occasions, the normal organic and supporting graves registration personnel will be inadequate to cope with the task due to the number of deaths that can occur in a short time.

The graves registration facilities of subordinate units will frequently require assistance from higher headquarters in recovery, identification, and evacuation of remains. Training in graves registration procedures for all troops should be increased so that all personnel can perform

some of the duties now performed by graves registration units and personnel.

Situations may arise in atomic warfare where there is no alternative to group burials or interments. There may be other situations where local civilians cannot handle the civilian dead and military assistance may be necessary. Units may also require assistance from higher headquarters in these activities. At times the use of local civilian and POW labor on these activities, working under supervision of graves registration personnel, may be the only solution.

Prior planning must anticipate these conditions, and higher headquarters must be prepared to augment graves registration facilities of subordinate units immediately following an atomic attack. Troop lists, particularly at army level, will require close examination to ensure adequacy of graves registration units.

### Morale and Personnel Services

*Morale.*—It is difficult to predict the over-all effect of atomic weapons employment on the mental attitude of the individual soldier. However, morale may be lowered when our troops:

View results of enemy atomic weapons employed on own and friendly units.

Sustain personnel losses by our own use of atomic weapons.

Are required to occupy or pass through areas which have just been subjected to atomic attack.

Are required to occupy the frontline when atomic weapons are employed very close to the frontline to assist our tactical operations.

View results of our atomic weapons on the enemy, especially civilian women and children.

Are subjected to false rumors concerning effects of fallout and sterility.

Are not properly indoctrinated.  
On the other hand we may well find that



troop morale is greatly improved when atomic weapons are employed to support our operations, due to the fewer casualties that we will probably sustain in such operations.

These psychological effects will vary with the training and experience of each unit. Morale problems can be overcome by good leadership and proper indoctrination, training, and discipline of troops prior to commitment in atomic operations. *Espirit de corps* will be of tremendous importance.

**Personnel services.**—Many of our personnel services depend on some type of assembly of personnel (unit exchanges, movies, USO shows, clubmobiles, religious services, and leave areas). If possible, troops in an atomic war should not be denied these activities, but attendance must be controlled and other passive measures should be taken. These restrictions may require some activities to operate on a 24-hour basis in order to serve all personnel, and will necessitate use of basements and other underground shelters.

Entertainment such as USO shows and movies should be limited to rear areas where adequate defensive measures can be established. Use of leave areas and recreation centers will be feasible if these sites are carefully selected. They should not be located in or near potential atomic targets.

The frontlines will probably remain as the area of greatest constant exposure to fear and other stresses, and some form of individual rotation will still be required for the frontline soldier.

### Personnel Procedures

In an atomic war personnel management will assume even greater importance. Personnel procedures such as classification, assignment, transfer, and reassignment will continue to be the means used to efficiently place individuals in units that have experienced severe losses from atomic attacks.

Replacing a portion of the affected unit's officer, noncommissioned officer, and specialist shortage by reassignments from within the major unit will be a big factor in maintaining *esprit de corps* and rebuilding combat efficiency. This action should also materially reduce the time required for unit rehabilitation and should hasten the unit's return to combat.

### Interior Management

Atomic warfare demands that alternate command posts and staffs be provided in case the main command post and staff are destroyed. The order of succession of command by other headquarters should be listed in the unit SOP or other appropriate orders.

The alternate headquarters should be furnished pertinent documents, and must be kept thoroughly abreast of the situation and future plans to ensure continuity of command and continuous operations. This alternate command arrangement will need more communications to permit the alternate headquarters to function effectively in its expanded role. All command posts must be kept small, light, and mobile, and operating procedures must be streamlined to ensure speed and efficiency.

A typical infantry division SOP providing for succession of command might read as follows:<sup>1</sup>

\* \* \* \* \*

### COMMAND AND SIGNAL

#### a. Command posts.

\* \* \* \* \*

#### (3) Reestablishment—comd facilities.

(a) To reduce the possibility of multiple loss of maj HQ as a result of use of atomic wpns, maj comd HQ will maintain a minimum of 3,000 yd dispersion from one another.

(b) In the event of the destruction or temporary neutralization of div HQ, div comd facilities will be reestablished by

<sup>1</sup>From Command and General Staff College Instruction Circular 4, *College Data*.



the fol HQ, in accordance with the sequence in which they are listed:

1. HQ, div arty.

2. HQ, regt(s) in div reserve, or any centrally located regt selected by the div (or acting div) comdr, based on suitability of loc and adequacy of comm facilities.

(c) Within regts, a sequence will be established.

(d) The sequence of succession within div arty will be as prescribed by CG, div arty.

(e) When a HQ facility has been destroyed or neutralized, the senior surviving comdr within the comd affected will move to the new HQ facilities and assume comd. Pending the arrival of such senior surviving comdr, comd will be exercised by the comdr of the HQ which has become the new CP.

(f) Surviving stf pers of a HQ which has been destroyed or temporarily neutralized will promptly move to the new HQ or rept their loc and activities by appropriate means. Pending receipt of other instructions, they will continue their assigned functions.

\* \* \* \* \*

### Civilian Personnel

Atomic warfare will demand greater use of indigenous civilian employees by the Army in overseas theaters in order to conserve United States military manpower.

Labor requirements will be increased in certain localities particularly in those areas where passive measures are taken to minimize the vulnerability of logistical facilities and installations to atomic attack.

Labor supply may be complicated in these and other areas because atomic warfare may: eliminate, incapacitate, or disperse many civilians who could otherwise be used as laborers; decrease the number available for hire due to their use by local officials in rehabilitating areas which have

suffered an atomic attack; and cause some civilians to be reluctant to work in congested areas or in areas considered likely targets for atomic attack.

This labor difficulty may prohibit, among other things, the organization and utilization of Type B units in certain localities. This problem can be met to some extent by recruiting civilians from other areas and organizing a greater number of mobile labor units to be employed as the situation demands.

Providing food, clothing, shelter, and medical care will be far more attractive than offering danger pay or incentive pay to static laborers. These benefits would also create less conflict with local civilian interests and would tend to improve rather than disrupt the local economy.

### Miscellaneous

G1 must take adequate measures to ensure continuity of administration and the preservation of vital administrative data in the event of atomic attack. More attention should be given to such things as simplification and protection of records and reports pertaining to individuals and units. Simplification of administrative procedures, as well as the records and reports themselves, and adequate protection of records and reports will make a considerable contribution to administrative efficiency in atomic warfare.

### Conclusions

Even though atomic weapons have not been employed tactically in combat, from the foregoing discussion it is readily apparent that atomic warfare will present problems of greater magnitude for division, corps, and army G1's. As the commander's principal assistant in the management of personnel as individuals, G1 must engage in realistic prior planning to offset the adverse effects and to capitalize on the favorable effects. This planning must be coordinated with all interested

agencies to ensure adequate and continuous personnel support.

In spite of the complexity and magnitude of these problems, many can be resolved by proper indoctrination, training, and preparation of individuals and units for the atomic battlefield. Superior leadership in all units and *esprit de corps* will be of even greater importance. Other problems will require G1 to:

Examine the troop basis continuously to ensure adequate support for all personnel activities.

Recommend stockage of certain infantry, artillery, and armored MOS's in division replacement companies.

Recommend replacement units be made

available to replace certain infantry, artillery, and armored units.

Establish replacement factors to assist in determining the type of replacement support required (individual or unit).

Incorporate in unit SOP: additional strength reports from units subjected to an atomic attack; procedures for replacing individuals and units; and provision for an alternate command post and staff.

Develop atomic loss rate tables as soon as data is available.

Ensure maximum use of POW and local civilian labor on authorized tasks.

Develop measures to ensure continuity of administration and preservation of vital administrative data.

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Military strength, to be impressive, must be properly balanced strength applicable to any likely situation. By balanced strength I do not mean, as the term is sometimes interpreted, equal strength, of Army, Navy, and Air. It should be recognized that increases of strength beyond a certain point eventually encounter the law of diminishing returns in measures of deterrence. Balanced strength means flexible proportioned strength, including military means in various forms appropriate to cope with small wars as well as big wars, with wars in jungles or mountains as well as in Europe, with wars in which atomic weapons are used, and with those in which atomic weapons are not used. Balanced strength includes the means to put out brush fires promptly before they can spread into general war.

\* \* \* \* \*

The Army, with its flexible family of weapons, ranging from the pistol of the military policeman to the kiloton blast of its atomic weapons, is particularly well qualified to apply measured power. The Army has weapons suitable to deal with any target which comes within their range. By their use, in general war, the Army is prepared to deny the enemy vital terrain areas overseas which must be held if our postwar objectives are to be attained. Its forces, prepositioned abroad, are an important part of the bulwark erected by the West, empowered to keep out an aggressor while our other forces and weapons deploy and bring their additional power to bear.

General Maxwell D. Taylor

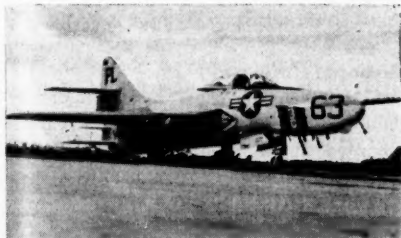
# MILITARY NOTES

## AROUND THE WORLD

### UNITED STATES

#### Superphoto Jet Plane

The Navy's *F9F-8P*, a versatile jet fighter that doubles as a photoreconnaissance plane, can fly nonstop across the United States in less than 4 hours and photograph a continuous 10-mile-wide strip at the same time. The swept-back



Transonic photoreconnaissance jet airplane.

wing plane, a recently developed version of the *F9F-8 Cougar* fighter, matches its transonic jet fighter counterpart in flight characteristics, and by using in-flight refueling can turn out 5 hours of continuous film.—News release.

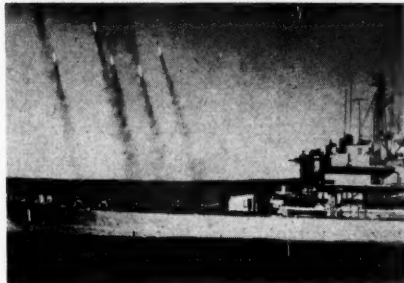
#### Seaplane Tests

The Navy's second *XP6M-1 Seamaster* (MILITARY REVIEW, Feb 1955, p 65) has made its first successful test flights. The multijet mine-laying and photoreconnaissance aircraft is reportedly capable of speeds in excess of 600 miles an hour.

Flight tests of the present *Seamaster* were delayed to permit installation of test equipment of the type lost in the crash of the first *XP6M-1* last December. The accident in which the first aircraft was lost has been attributed to a malfunction of the control system. Remedial steps have been taken on the second seaplane to cover all possible contributing factors to the mishap.—News release.

#### Rocket Ship

The *USS Carronade* (MILITARY REVIEW, Aug 1955, p 62) recently participated in amphibious training operations in the Pa-

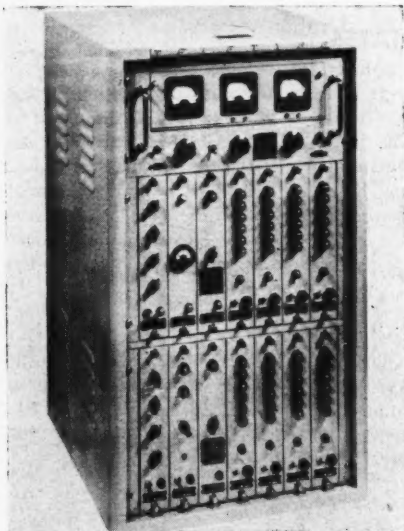


*USS Carronade* fires rockets in training.

cific. The *Carronade* is an inshore fire support ship (IFS) designed to replace the medium landing ship, rocket (LSMR) of World War II.—News release.

### Transistorized Equipment

A transistorized telegraphic transmitter-receiver and an all-electronic telephone switchboard that uses no vacuum tubes have been developed for the Navy. The transistorized telegraph set is one-fifth the size and one-fifth the weight of the set it replaces. The 572 transistors and 739 germanium diodes of the new model can handle 100 words per minute over each of four channels simultaneously as compared to the 60- to 75-word limitation of the older model. The transistorized tele-



High-speed transistorized telegraph set.

phone switchboard requires less than half the space occupied by the older models and weighs only about one-fourth as much. It handles a 100-line, 15-link system and is designed for shipboard operation.—News release.

### Air Rescue

A major reorganization of the United States Air Force Rescue Service was announced recently. The reorganization places greater emphasis upon helicopters,

and the older concept of utilizing a comparatively few large bases is to be replaced with a program of many smaller, versatile air rescue detachments dispersed throughout the country. The use of helicopters will reduce the number of fixed-wing aircraft presently utilized and helicopters will supplant crash-rescue boats in the new program.—News release.

### Speed Record

A high-speed research plane, the X-2 (MILITARY REVIEW, Oct 1955, p 69 and Nov 1955, p 66), is reported to have flown at a speed of nearly 2,000 miles an hour in a recent test. The X-2 was designed and built to explore the "heat barrier"—the point at which friction resulting from the high speed starts to weaken the metal of the aircraft. The needle-nosed X-2 is constructed of stainless steel and special alloys. Its special glass windshield is designed to withstand temperatures of 1,000 degrees Fahrenheit.—News release.

### Airborne Television

Live television shots of strategic territory can now be taken by a camera mounted in a pilotless radio-controlled plane and broadcast to a mobile, central station on the ground in a system recently developed by the Army Signal Corps. The system places a 25-square-mile area under observation, and it is expected that the area of coverage will be increased when radar is incorporated into the system. Results have been stated to be "instantaneous for immediate ground evaluation."—News release.

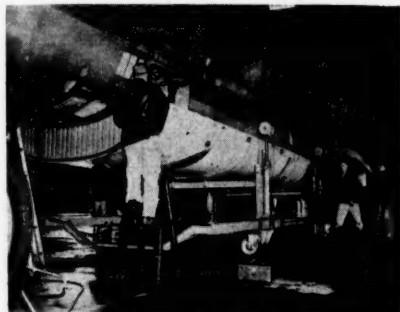
### Atomic Test Site

The Atomic Energy Commission's Nevada test site is to be expanded by 480 square miles. The additional area, consisting of desert basin and mountain territory, is adjacent to the western boundary of the present site and will be transferred to the AEC by the Air Force. It is now

part of the Air Force's Las Vegas bombing and gunnery range.—News release.

### Bomb Bay Capsule

A unique "capsule" design feature in recent production models of the *B-52 Stratofortress* enables the 8-jet, 200-ton, long-range bombers to perform multiple



Unique bomb bay capsule in *Stratofortress*.

strategic roles. The modification consists of a pressurized, air-conditioned capsule which fits into the bomb bay of the aircraft. It is equipped with stations for a 2-man crew and has provisions for aerial cameras, interchangeable electronic equipment, and antennas. Bomb bay areas of both the *B-52B* and *B-52C* are equipped with fittings to accommodate the multipurpose capsule. This unusual design allows the *B-52* to be utilized for conventional and nuclear weapons delivery, photographic reconnaissance, and electronic missions at speeds of more than 650 miles an hour and at altitudes of more than 50,000 feet. Heretofore, a separate airplane type of modification of basic service types was needed for each specific mission.—News release.

### 'M-1' Rifle

The decision has been announced to retain the *Garand M-1* rifle as the principal hand weapon of the United States soldier, ending a long-term study of the possible advantages of a faster-firing, lightweight

weapon. Both the *T-44*, an American development of the *Garand* weapon, and the *T-48* Belgian rifle have been exhaustively tested by Army ordnance officials. The decision to retain the *Garand* was based on the fact that while the two weapons being tested were definite improvements over the older rifle, the margin of superiority was not enough to justify a considerable outlay for new production lines.—News release.

### Tilt-Wing Plane

A contract for the design and development of a "tilt-wing," turbine-powered vertical takeoff and landing (VTOL) research aircraft has been announced. The VTOL aircraft will combine the vertical takeoff and landing capabilities of the helicopter and the high-speed performance of transport airplanes. It will be equipped with a single turboprop engine geared to two rotor propellers mounted on the wings. In hovering flight the tiltable wing is in the vertical position and the rotor propellers provide the vertical thrust as



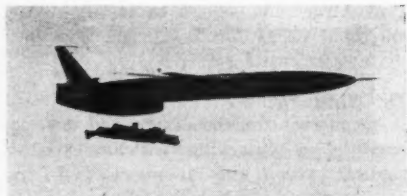
VTOL aircraft landing in unprepared area.

in the helicopter. In cruise and high-speed flight the wing is in the normal horizontal position and provides the lift while the rotor propellers provide the forward thrust. The transition from vertical lift to forward flight is accomplished by tilting the wing-propeller combination forward. The VTOL transport type aircraft

development could alleviate some of the need for costly airport construction since heliport type landing facilities are all that are required.—News release.

### Missile Test

The Air Force's *SM-62 Snark* long-range strategic missile (MILITARY REVIEW,



**Air Force *Snark* makes jet-assisted takeoff.**

Jun 1956, p 66) is currently undergoing tests at the Air Force Missile Test Center in Florida. The *Snark* is a winged, pilotless bomber capable of delivering a nuclear warhead at near the speed of sound and is reported to have flown over 2,000 miles in a test run.—News release.

### 'Missile Master'

The Army's *Missile Master*, which controls the *Nike* defenses of the Washington-Baltimore area, is the first integrated system for tying together all elements of anti-aircraft missile defense from target detection to target destruction. The system is used in conjunction with the Air Force's semiautomatic ground environment defense system (SAGE) but can operate independently of SAGE if necessary. The system, which includes a 200-mile range surveillance radar and altitude finding radars, can detect individual planes in a mass raid, assign *Nike* batteries to specific planes, and differentiate between enemy and friendly aircraft in the area. Before the advent of the *Missile Master* each *Nike* battery operated independently with its own separate detection and fire control system. The new system coordinates the operations of an entire complex of batteries, furnishing information as to

the current air target situation and targets being engaged by other *Nike* batteries in the defense area, thus assuring that all identified targets are engaged without duplication of effort. Other *Missile Master* installations in existence or being built will overlap the radar range of the Washington-Baltimore installation to provide an integrated detection system in the Atlantic coast region.—News release.

### Destroyer Escorts

Two new type destroyer escort vessels are planned for construction in the near future. The vessels will be the first of the new *DE-1033* class and will displace approximately 1,350 tons. The *DE-1033* class vessels are designed to have the tight turning radius and low silhouette required for antisubmarine warfare. Vessels of this class can be fitted with either diesel engines or conventional steam turbines. This feature and their single shaft, single screw arrangement result in a simplicity of design that will facilitate mass production in the event of mobilization.—News release.

### Speedy Test Flight

The Navy's *F-5D Skylander*, all-weather, carrier-based jet, exceeded 760 miles an hour in its first test flight. The *Sky-*



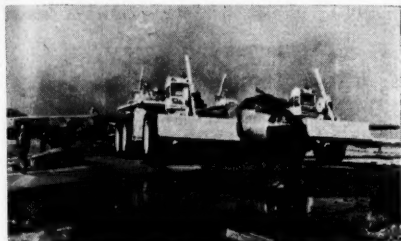
**A fast carrier fighter in catapult takeoff.**

*lander* is designed for catapult takeoffs and rapid altitude climbs. It features thin bat-shape wings and a very slender fuselage.—News release.



### Aircraft Crash Pushers

A recently developed aircraft crash pusher is capable of pushing a 400,000-pound wrecked bomber off a runway in



Crash pushers clear runway in minutes.

less than 20 minutes, an operation that formerly took from 5 to 15 hours. Each of the vehicles costs \$150,000, weighs 150,000 pounds, and has a scoop on each end for faster operation. The big vehicles, mounted on six 10-foot wheels, operate in pairs by placing their scoops against the crashed aircraft and literally shovel it off the runway.—News release.

### Artillery Test Projectile

A newly developed artillery projectile made of paper and water will be used to provide an inexpensive shell for test firing. At present it is made for the 105-mm howitzer only. It costs about 1 dollar to produce while the conventional metal projectile costs about 10 dollars. Its weight and resistance to the expansion of the propellant gases make it possible to test operation of the howitzer's recoil system. This projectile makes it possible for the weapon to be fired where the range is a matter of 100 feet or so, for the muzzle blasts forth only water and bits of paper. The new type of projectile is filled with water just before firing and then loaded into the gun's muzzle instead of the breech as standard rounds are. The water spray from the projectile is harmless, but the cardboard end closures may damage targets at a distance of 75 feet.—News release.

### Troop Housing

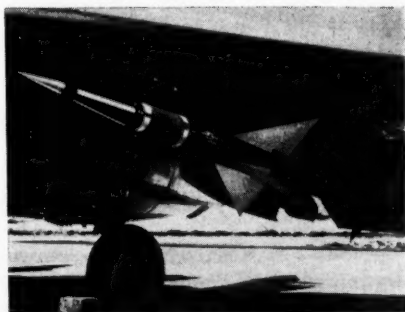
Of the United States Army troops stationed in Korea, 80 percent are now housed in solid buildings and before next winter a construction battalion will replace the remaining tents with quonset huts.—News release.

### Ammunition Ship

The second of a new type of ammunition ship designed especially to conduct rapid resupply in sea operations, the *Mauna Kea AE-22*, was launched recently. The new ammunition ships are steam turbine-propelled, with one screw. They carry a complement of 350 officers and men and are armed with four 3-inch twin mounts. The first ship of this type, the *Suribachi*, was launched a year ago.—News release.

### Combat Ready Missile

The Navy's *Sparrow 1*, air-to-air guided missile, is ready for use by the planes of the *USS Intrepid* aircraft carrier of the Mediterranean Fleet. Additional aircraft carriers in both the Atlantic and Pacific Fleets, including the *USS Forrestal*,



*Sparrow 1* mounted on wing of *Cutlass*.

*tal*, will be equipped with the *Sparrow 1* when deployed overseas. The missile is about 12 feet long, weighs about 300 pounds, and is powered by a solid propellant rocket motor. It attains a velocity of more than 1,500 miles an hour within seconds after launching and is guided to

the target by riding a radar beam transmitted by the launching aircraft.—News release.

### **Nuclear Submarines**

Seven of the nine nuclear-powered submarines now in commission, under construction, or authorized have been assigned names. The *Nautilus* and the *Seawolf* are in commission. Construction of the *Skate* and *Swordfish* was started in 1955. The *Sargo*, *Seadragon*, and *Skipjack* and two as yet unnamed undersea vessels are scheduled for construction in 1956. Additionally, it has been indicated that the Navy is planning the construction of a mammoth nuclear-powered submarine to be designated the SSG (N) 587. It will be capable of launching the 1,500-mile, medium-range ballistic missile.—News release.

## **COMMUNIST CHINA**

### **Transportation Links**

Preparations are being made to restore the Chinese section of the Kunming-Indochina railway from Pishihchai in Yunnan to Hekou on the North Vietnam border. Parts of this line were destroyed during the Japanese war. Restoration was started on a section of North Vietnam from Hanoi to Laokay in 1955. When repaired it will complete a rail link from Kunming to Haiphong. At the same time it was announced that a North Vietnam-Communist China commercial air service had been opened.—News release.

## **JORDAN**

### **Organizational Changes**

The Arab Legion, Jordan's British-trained Army, will be merged with the Jordanian National Guard in an expanded modern fighting force under the title of the Jordanian Army in the near future. It was also disclosed that the 35-year-old legion will do away with its colorful red and white Arab headdress and will wear military caps or khaki berets like those worn by the Egyptian and Syrian

troops. The entire Jordanian Army, the report said, will wear Western style khaki, and the present silver buttons and badges of rank worn by the officers will be replaced by brass insignia.—News release.

## **WEST GERMANY**

### **Navy Program**

The West German Navy's building program has started with an order for the construction of 8 destroyers and 145 smaller vessels to be built by German shipyards. A total of 70 million dollars has been appropriated by the West German Government to begin the Navy's shipbuilding program.—News release.

### **Sunken Submarine**

A salvage firm has been hired by the West German Government to raise a World War II U-boat sunk in the Baltic Sea. The 350-ton submarine which lays in 90 feet of water will be used for training and research in the new West German Navy. When operational the submarine had an underwater speed of 25 knots.—News release.

### **Arms Shipment**

The first large-scale shipment of heavy-arms equipment from the United States to West Germany was completed recently. The shipment included 23 *M-41 Walker Bulldog* tanks, 20 tank recovery vehicles, and self-propelled artillery. All equipment is of the most modern type and similar to that in use by the United States Armed Forces and armies of other NATO countries.—News release.

## **JAPAN**

### **Defense Equipment**

Since 1951 the United States has leased or given Japan over 723 million dollars in defense equipment. The equipment so far has included firearms, vehicles, aircraft, and vessels. About 148 million dollars more in defense equipment is expected during the current fiscal year. This is expected to include 33 small ves-

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sels, 30 planes, and 1,350 tons of ammunition for the Japanese Navy, and 66 *F-86 Sabre Jet* fighters, 20 *C-46* transports, and 25 *T-6* jet trainers for the air force.—News release.

## PAKISTAN

### To Cut Dependence

Pakistan's 5-year plan which terminates in 1960 envisages a total outlay by the government of 1.5 billion dollars. The plan reveals that by 1960 the country's dependence on external aid for development purposes will be substantially reduced. The United States 300 million-dollar program of aid to Pakistan began 5 years ago.—News release.

## TIBET

### First Plane

The first plane ever to arrive at Lhasa, the Tibetan capital, landed there recently according to a report. A newly constructed airport at the once "forbidden city" brings it within a few hours' flying time of Peking and other Chinese cities.—News release.

## PERU

### Shipbuilding

Peru has become the third South American country to start a major shipbuilding industry. The other nations are Brazil and Argentina. Initial installations at Callao make possible the construction of ships up to a 12,000-ton displacement. The first vessel planned for construction is a 7,600-ton tanker.—News release.

## CZECHOSLOVAKIA

### Weapons Deal

Czechoslovakia is expected to send military equipment to Syria in line with a general expansion of mutual trade. Earlier reports stated that Czechoslovakia had agreed to supply Syria with 100 tanks, 100 armored cars, 25 fighter planes, and quantities of guns and ammunition.—News release.

## FRANCE

### Buys Renaults

The United States Army has purchased 411 French Renault automobiles for official use in France. They have also purchased 88 Renault buses to replace outdated United States Army buses. The total value of the cars alone is approximately \$500,000.—News release.

### Latest Transport Plane

France's *Breguet 763 Deux Ponts* is powered by four 2,400-horsepower engines which use water injection for takeoff. The



New double-deck *Deux Ponts* transport.

big midwing monoplane has a maximum range of 2,400 miles at a speed of about 240 miles an hour. The *Deux Ponts 763* is derived from the *Deux Ponts 761* design (MILITARY REVIEW, Mar 1955, p 69) and features a double-deck fuselage with belly doors for freight loading.—News release.

### Turbo-Ramjet Plane

France's *NORD 1500 Griffon* (MILITARY REVIEW, Jul 1956, p 70) is to be powered by a turbo-ramjet unit. The *Griffon* weighs slightly over 6 tons, and uses a parachute to reduce landing speeds. It has a 60-degree delta wing and a stabilizer located forward of the wing to ensure accurate longitudinal trim at all speeds. In experimental flights the *Griffon* has been powered by an *Atar* turbojet unit with afterburner. A turbo-ramjet power unit for the aircraft is presently undergoing wind tunnel tests and is expected to be installed in the *Griffon* in the near future.—News release.

## EGYPT

### Arms Production

Egypt has achieved self-sufficiency in small-arms production and now intends to begin production of heavier arms. Egypt's small-arms factories which began operation 4 years ago will also supply Arab countries which have military agreements with Egypt—Saudi Arabia, Yemen, and Syria.—News release.

## USSR

### Jet Car

The Soviets have produced an experimental jet-propelled automobile with a speed up to 200 miles an hour. The car is said to be cigar-shaped with a bubble canopy cockpit like an airplane and uses kerosene for fuel.—News release.

### Atomic Locomotive

An atomic locomotive of 5,500 horsepower is said to have been designed by Soviet engineers. The locomotive is reported to be capable of operating for 300 days without refueling, and can run 600 miles without taking on additional water. It is built in two sections, the first consisting of the atomic reactor and boiler, while a steam turbine, condenser, and other auxiliary equipment are in the second section. The fuel used is to be natural uranium reinforced with uranium 235, and the reactor is shielded with a graphite reflector, lead, and concrete.—News release.

### Army Strength

According to an estimate by the Supreme Allied Command in the Atlantic, the Soviet bloc of European nations could muster about 400 mechanized divisions with 6 million men within 30 days after full mobilization. The estimate also states that the Soviet bloc has 175 divisions of 3 million men currently in the field. It is said that 22 of these divisions are stationed in East Germany.—New release.

## Hydrogen Power

The construction of large powerplants with a capacity of 400,000 to 600,000 kilowatts each in the power-short European section of the USSR will be carried out as part of the Soviet experiments in control of hydrogen power. These are to be followed by experimental stations of various types with 50,000- to 70,000-kilowatt capacity. Earlier plans for atomic power development revealed by the USSR indicated that she is building power stations of 50,000- to 100,000-kilowatt capacity.—News release.

### Jet Boat

The construction of an experimental "jet-propelled" boat designed by Soviet engineers was recently announced. A second larger vessel is under construction, and it is reported that the "jet" principle may eventually be applied to large ocean-going vessels. In this propulsion system the water is sucked in through a screened duct beneath the vessel's bow and pumped out through two vents in the stern. Steering is accomplished by varying the flow of water through the stern vents. It is claimed that the shallow draft and absence of rudder and propellers make it ideal for river traffic.—News release.

### 'MiG-17' Speed

The Soviet MiG-17 (MILITARY REVIEW, Feb 1956, p 70) is said to be able to attain a speed of approximately 850 miles an hour. The cruising speed is said to be 750 miles an hour. The MiG-17 is an improved version of the MiG-15 which saw action with the Communists in Korea.—News release.

### Air Links

A Danish-Soviet airline service has been inaugurated over the Copenhagen-Riga-Moscow route. The first airliner to fly this route was a Soviet twin-engine Ilyushin 19 carrying 18 passengers. Four

weekly round trips are presently scheduled over the route.—News release.

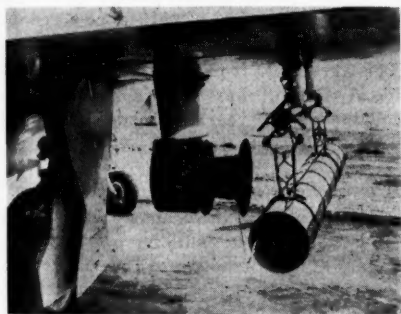
### **Iron Field**

A new field of ore containing 70 percent iron has been discovered in the southern portion of the Soviet Republic near Belgorod.—News release.

## **GREAT BRITAIN**

### **Target-Launching Device**

A device that permits a target to be launched by a tow plane after it is airborne is in use by the Royal Navy. The new launching device, called *Excelsior*,



Target-launching device is wing-mounted.

was developed to relieve congestion on busy airfields caused by the laying out of towcables that was necessary when targets were towed off the ground. Its use is expected to greatly facilitate target practice by carrier-based planes in midocean.—News release.

### **Versatile Fighter**

Recent modifications of Great Britain's versatile *Hawker Hunter* include a 2-seater in which pilot and copilot are seated side by side, and a photoreconnaissance model. In recent trials the *Hunter* has successfully carried replicas of guided missiles at supersonic speeds, and one version of this aircraft is now armed with the *Fireflash* air-to-air missile.—News release.

### **Water Test Tank**

A gigantic water test tank has been constructed by a British firm to simulate the stresses and strains of actual flight both inside and outside of aircraft. Ca-



*Comet 2* is ready for testing in water tank.

pable of accommodating a *Comet 4*, the test tank is 140 feet long and holds 290,000 gallons of water.—News release.

### **Jet Transport**

The *Comet 2*, Great Britain's latest long-range jet transport, is scheduled for regular service in the near future when a squadron will be equipped with the new transport. The *Comet 2* is scheduled for use in providing high-speed regular serv-



*Comet 2* aircraft during its maiden flight.

ice between Great Britain and the Woomera rocket-testing range in central Australia. The *Comet 2*'s four Avon turbojets are claimed to give it 30 percent more power than the *Comet 1*.—News release.

### Peroxide-Powered Submarine

Great Britain's latest experimental submarine, the *Explorer*, uses high-test peroxide in its propulsion system. The *Explorer* carries no armament and will not take part in naval operations but will be used for training antisubmarine forces. It is capable of high underwater speed and long endurance. The *Explorer* is claimed to be the first stable ocean-going vessel to use peroxide as fuel. However, peroxide was used by the Germans to launch V-1 missiles, to drive the fuel pumps in V-2 rockets, and to propel torpedos in World War II.—News release.

## AUSTRALIA

### Aircraft Carrier

Australia's new aircraft carrier, the *Melbourne*, commissioned in Great Britain last year, has successfully completed her first test with jet aircraft, and has been delivered to Australia. The *Melbourne* is equipped with *Sea Venom* and *Gannet* aircraft and features the most modern carrier aids to include the angled deck, steam catapult, and mirror landing sight. The *Melbourne* is the first Australian carrier to operate jet aircraft.—News release.

### Stall Tests

An *Avro 707A* research aircraft has been loaned to Australia by Great Britain for use in research to determine the cause of stall in delta-wing aircraft. The *707A* is a small-scale version of the *Avro Vulcan* jet bomber which is now coming into Royal Air Force squadron service.—News release.

### Road Trial

Tests for a jeep type vehicle, designed and built in Australia, include a 500-mile road trip towing a heavily laden trailer. Orders for 2,000 of the vehicles have been received and production is expected to reach 20,000 a year within 3 years.—News release.

## INDIA

### Expanded Plan

India's second 5-year plan calls for a government expenditure of slightly more than 10 billion dollars during the next 5 years. The plan which will be in effect until 1961 calls for a further 1,680 million dollars in assistance from abroad. In the last 5 years India has received less than half this amount.—News release.

### Sells Bombers

Great Britain has agreed to sell India 60 *Canberra* medium bombers. The twin-jet *Canberra* (MILITARY REVIEW, Feb 1953, p 69 and Mar 1953, p 69) is powered by *Olympus* 10,000-pound thrust engines. This agreement is part of the plan whereby Great Britain has been assisting India for the past 3 years in modernizing and reequipping her air force.—News release.

### Atomic Reactor

The Canadian Government has agreed to assist India in building a 14 million-dollar atomic reactor to be located in the vicinity of Bombay. The new reactor is expected to be in operation by June 1958. Under the plan, Canada will furnish the total external expenditure on the project while India will bear the construction costs. Canada's contribution is expected to be approximately 7.5 million dollars.—News release.

### Coinage System

Beginning on 1 April 1957 India will adopt the decimal system of coinage used in the United States. Under the new system the rupee will continue to be the standard unit but it will be divided into 100 *naya* *paisa* units, with new coins in the denominations of 1, 2, 5, 10, 25, and 50 *naya* *paisans*. Previously the rupee has been worth 192 *pies* or 16 *annas*. Government officials estimate that it will take 3 years to replace the old complicated system with the new one.—News release.



# FOREIGN MILITARY DIGESTS

## Soviet Artillery Counterpreparation

Translated and digested by the MILITARY REVIEW from an article by General Niessel in "Revue Militaire d'Information" (France) 10-25 August 1955.

SAVE in exceptional cases, major attacks through the years have been preceded by violent artillery action and, since the final phase of World War I, the number of pieces employed and their rate of fire have permitted considerable reduction of the time necessary for this preparation. On the other hand, the time necessary for assembling the troops charged with the execution of the attack in a limited area has often permitted an artillery counterpreparation—a short and violent artillery barrage when the defender has discerned the attack preparations of the assailant and at least the approximate moment of this attack so as to “nip it in the bud,” or at least to reduce its violence. Today, it is possible to join the action of aviation with that of the artillery, thus placing in the hands of the commander of an army a means of defense through paralyzation of the preparation for the attack by powerful and concentrated fire which inflicts heavy losses on the adversary in men and matériel.

The operations of World War II on the Soviet front presented some characteristic

examples of counterpreparations. The Soviet documents relative to the great battle of July 1943 in the Kursk pocket, which marked the turning point of the war, enable us to study the organization and execution of this mode of combat in three different armies without the intervention of aviation, and of a variant operation in which aviation was also employed.

Around the city of Kursk the Soviets held a vast pocket pointing toward the west, 125 miles broad and of equal depth. Abreast of Bryansk, this pocket bordered on the German Orel salient. To the east of the southern edge of this pocket the Soviet front stretched from north to south, from Belgorod to Kharkov. Because of German concentrations which had been forming for several weeks north and south of the pocket, consisting mostly of large armored units, the Soviet High Command looked forward to a powerful German offensive. It was evident that the enemy would attempt to cut the pocket open at its base. For this reason the main zones of defense were solidly organized some little distance inside the periphery of the

pocket whose western part, being largely protected by water courses, could be easily defended.

We shall discuss the counterpreparations mentioned above and point out the lessons the Soviet General Staff drew from them.

### The Thirteenth Army

The Thirteenth Army under General Rokossovski was a part of the Central Army Group which had the task of defending the north side of the Kursk pocket. On this front the aviation had spotted numerous tracks left by the German tanks and the forests where they were assembled. Its commanders asked authorization to attack them but General Rokossovski opposed this on the ground that it was best not to let the Germans know that their action was expected, and instructed the aviation to act only against the railway stations where the enemy detrained and unloaded his supplies, until such time as the tanks went into action. At the same time, an artillery counterpreparation was minutely planned by the army command. The artillery commander of the army group had prescribed that the main artillery effort was to be directed against the enemy artillery. The artillery counterpreparation against the infantry and tank assembly zones was to be started only in case of occupation of these zones.

The staffs of the infantry divisions were authorized to introduce minor modifications of detail based on reconnaissance. The action prescribed was checked by the staff officers of the army artillery. A duration of 30 minutes was fixed for the counterpreparation and an expenditure of ammunition corresponding to 25 percent of the total supply was allocated. The counterpreparation was to comprise the following phases:

A 5-minute burst of fire by all guns against the enemy's batteries and observation posts.

Methodical fire for 20 minutes by half

of the guns against the same targets.

A 5-minute burst of fire by all guns against the same targets.

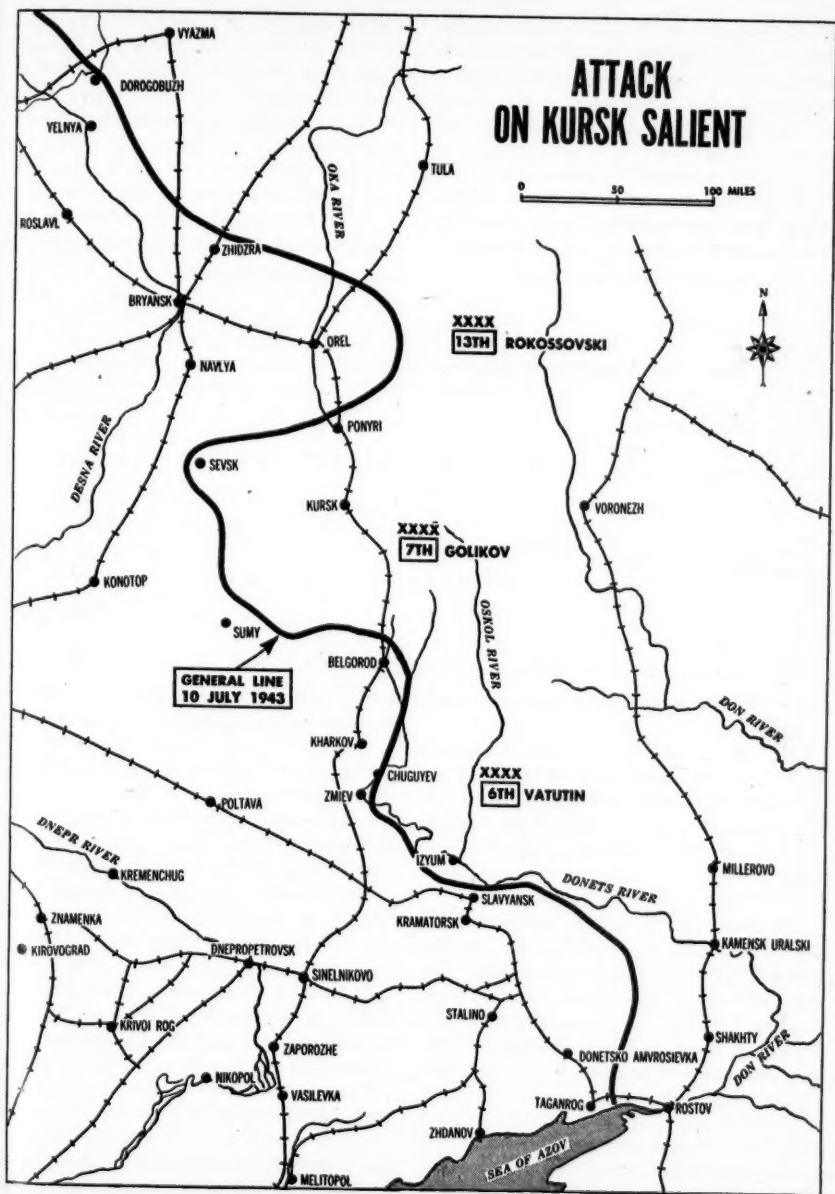
During the final days before the battle it had been learned that large forces of German infantry and tanks were approaching the front. Ground and air reconnaissance and continuous observation had resulted in the spotting of 104 artillery battery positions, 22 mortar positions, a large number of observation posts, and various zones which appeared to have been prepared as jumping off positions.

The interrogation of German deserters and prisoners since early in July indicated that the offensive was imminent. It had also been noted that the Germans were removing their minefields. Finally, at 2230 on 4 July, a Polish deserter from the enemy engineer forces stated that the attack was scheduled for 0230 on the 5th.

The order was given, therefore, to begin the artillery counterpreparation at 0220. Participating in it were elements from 4 regiments of divisional artillery, 2 regiments of army mortars, 6 regiments of mortars, 4 regiments of light artillery, 6 regiments of howitzers, 6 regiments of heavy, long-barreled artillery, 5 regiments of Guard rocket projectors (*Katyushi*) of the IV Corps of general artillery reserves, as well as 30 percent of the 120- and 82-mm mortars of the infantry regiments of the first echelon divisions (4 batteries of 120's and 12 companies of 82's).

The quantity of artillery and mortars actually used as well as the density of their fire per mile of front is shown in the table on page 76.

The counterpreparation was fruitful. It resulted in the destruction of 90 batteries, 60 observation posts, and 6 ammunition dumps. The infantry and the tanks, caught in their assembly zones, fell back and suffered serious losses. The German artillery preparation was not able to begin until 0430. It lasted for 1 hour and 20 minutes and was fairly disorganized. This made



possible a renewal of the counterpreparation at 0435. The two counterpreparations consumed one-half the ammunition supply.

The Germans, deprived of a large part of their artillery, did not obtain the results for which they had hoped, however, the Soviet forces were obliged to fall back, enabling the Germans to form a pocket which was not eliminated until 18 July. The battle had been a violent one and had

July a deserter said that the attack was to take place on the night of 4-5 July. Finally, at 1600 on 4 July, following a short artillery preparation, enemy reconnaissance in force caused the Soviet security elements to fall back. The attack was evidently imminent.

The Sixth Army of the Guard had prepared a counterpreparation plan. To participate in it were 4 regiments of divi-

Matériel Employed	Width of Counter- preparation Front	Density Per Mile	
		Cannon and Howitzers	Heavy Mortars
76-mm cannon 220	19.8 miles	30.4	22.4
122-mm howitzers 207			
122-mm cannon 39			
152-mm howitzers 41			
507			
120-mm mortars 321			
82-mm mortars 139			
460			
Total 967		52.8	

caused both sides to employ large armored groupments.

The effects of the counterpreparation would probably have been different if its principal effort had been directed against the assembly zones of the attack rather than toward the German artillery positions.

#### Sixth Army

The Sixth Army of the Guard, under General Vatutin, formed a part of the Voronezh Army Group which held the southern side of the Kursk pocket. Since 28 June an increase in the movements of German troops had been noted on the Belgorod-Tomarovka road and their most advanced elements maintained close contact. Prisoners taken on 2 July had stated that forces of all arms, especially armored units, were being unloaded in the neighborhood of Belgorod. On the night of 3-4

sional artillery, 2 brigades of cannon, 1 regiment of army artillery, 2 mortar regiments, 4 Guard rocket projector regiments, the infantry artillery, the 120- and 82-mm mortars and the fire of the light weapons and machineguns of the infantry regiments of the first echelon divisions, and the fire of the tanks in position.

On the other hand, in order not to reveal to the enemy the Soviet antitank defense, the artillery which was in the antitank zones and the antitank guns did not take part in the counterpreparation.

The table on page 77 indicates the quantity of matériel employed in the counterpreparation.

The counterpreparation was to be directed principally against the 17 jumpoff zones that had been located by reconnaissance and observation, 17 German observation posts, 12 batteries that were par-

ticularly troublesome, and various other targets.

It was decided to begin at 2230 on 4 July in the form of a 5-minute burst of fire. It was renewed at 0300 on the 5th: a 5-minute burst of fire on the attack positions, then 15 minutes of systematic fire, and finally a 10-minute burst of fire on the same targets.

The ammunition expenditure was one-half of the total available.

### Seventh Army

The Seventh Army of the Guard as well as the Sixth Army was a part of the Voronezh Army Group. A counterprepa-

reinforced and they had increased their fire against this wing from 700 to 3,200 rounds a day. The movement of German personnel and matériel to the front had been increased considerably with more than 3,000 trucks being counted since 6 July. Motor vehicle columns had pushed very close to the front at night and command posts and airfields also were moved forward. A concentration of three divisions of tanks had been observed west of Belgorod.

Information came from the other armies to the effect that the offensive was to begin during the night of 4-5 July. It was decided, therefore, to carry out the coun-

Matériel Employed	Density Per Mile		
	Cannon (less those of 45-mm)	Mortars	Guard Rocket Projectors
45-mm cannon 36	18.4	30.4	8.5
76-mm cannon 100			
122-mm cannon and howitzers 61			
152-mm cannon and howitzers 47			
244			
Mortars:	57.3	57.3	57.3
120-mm 117			
82-mm 239			
356	57.3	57.3	57.3
Guard rocket projectors 95			
Total 695			

ration plan comprising several variants had also been provided here.

During the entire month of June the Germans had carried on great air activity over the front of this army and had heavily bombed the artillery positions of the right and center. Since 1 July they had carried on combat reconnaissance over the entire front. German forces opposite the right wing of the Soviet Army had been

terpreparation plan of the Seventh Army of the Guard in which the following elements participated: 7 regiments of divisional artillery, 3 regiments of cannon of the general reserves, 1 regiment of mortars, 2 rocket-launcher regiments of the Guard, and the regimental artillery and the 120- and 82-mm heavy mortars of the infantry regiments of the first echelon divisions.

The artillery which was in the antitank zones and the antitank artillery were not used for the counterpreparation. On the other hand, support from the artillery of the adjoining sectors was arranged. Considerable difference in the density per mile of front—from 41.8 to 110.4 pieces per mile—resulted from these dispositions.

The counterpreparations, which began at 0300, consisted of a 5-minute burst of fire, followed by systematic fire for 15 minutes, and ended in a 10-minute burst of fire on all known German assembly and attack areas.

The enemy had been placed on the alert by the counterpreparation fires of the Sixth Army of the Guard which began at 2230. This counterpreparation resulted in such serious losses for the German 19th Armored Division that it was not able to move out and attack. However, in spite of the losses inflicted by the counterpreparations of the Sixth and Seventh Armies of the Guard, the German tanks did move on the first day into the main defense position of the southern flank of the Kursk pocket. Their progress, and the Soviet losses, made it necessary to send to this area the Fifth Armored Army and a motorized army corps in forced march from a distance of 185 miles in the Soviet rear. It was not until 19 July that the German advance was definitely halted and not until the 21st that the German retreat began.

Another Soviet document has indicated, without naming the army concerned, a variant to a counterpreparation plan involving cooperation by aviation, but did not state whether this variant was used. This plan comprised three artillery phases of 10 minutes, and between the first and second phases the bombing by planes was to take place.

The counterpreparation, as stated in a document dated after the Battle of Kursk, is a means of defense which paralyzes the enemy by powerful and concentrated fire which will interfere with his preparation

for the attack and inflict on him heavy losses in personnel and matériel. Experience shows the necessity for participation by the artillery, the mortars and mortar regiments, aviation, the fire of the tanks, and the fire of the rifles and machineguns of the infantry.

The organization of the counterpreparation is based on information systematically collected by all means of reconnaissance and a study of the terrain in the sectors where the enemy offensive is possible. In the Soviet Army it is conceived and prepared at army level by the commander of the army artillery and the chiefs of the various arms in accordance with the orders of the army commander. If air effort is involved, the commander of the aviation placed at the disposal of the army for the counterpreparation also participates in the planning.

The principal targets of the Soviet counterpreparation are the groupments of infantry and tanks which are assembling or are in their jump-off positions, observation posts, artillery positions, headquarters, ammunition dumps, and communication centers. Particularly violent action is directed against groupments of infantry and tanks where the confusion and losses caused by the counterpreparation may break up the attack before it begins. The destruction of a large number of batteries will adversely affect the enemy's artillery preparation, but there is always the chance that the latter will, at the last moment, have altered the disposition of his artillery. Unexpected and concentrated fire against the enemy's observation posts may seriously interfere with the cooperation between various arms, and when directed against the command posts may disrupt their connections with one another and with their troops.

If the defender possesses sufficient artillery and air means, he will act with equal vigor against targets of all types.

Under the Soviet system the artillery



plays an important role in counterpreparations. All calibers are suitable for use against infantry. Against tanks, 122- and 152-mm pieces are employed. Against observation posts, artillery is employed in direct fire. Against headquarters, ammunition dumps, and road intersections the fire of at least a battalion is concentrated. Most commonly, the artillery acts by short and violent bursts of fire. At times, however, a period of systematic fire is interpolated between two bursts. As a rule it is better to leave the batteries in their defensive positions during the execution of the counterpreparation, for they could be in danger of being caught in enemy preparatory fire while on the way to occupy them after the counterpreparations.

Mortars of all calibers are employed by the Soviets against assembly or jump-off positions of the infantry on whom they may inflict heavy losses in personnel. Those of 120-mm caliber are suitable for demolishing observation posts within their range. Those of the first echelon infantry regiments, even of small caliber, assist in the counterpreparation and, therefore, must be resupplied in advance.

The rocket projector regiments of the Guard are armed with rocket projectors called *Katyushi*. These regiments were numerous in the Soviet armies as is obvious from the data concerning the units participating in the aforementioned counterpreparations. Great importance was attached to their role and their fire plan is coordinated with that of the army. Their centralized utilization permits their massed employment in the most important sector. Their final plan of employment is fixed by the command of the army group taking into account the counterpreparation plan of the army.

If it is considered necessary for tanks to participate in the counterpreparation, careful preparatory work is required. It goes without saying that this employment is not to interfere with their main role.

They are able to furnish a great density of fire.

Aviation is capable of acting against all the targets of the counterpreparation. It may be employed either by superimposing its action on that of the artillery and mortars or by directing its action against distinct zones of targets. This second mode of employment is fitting, particularly in cases where the counterpreparation is applied over vast areas.

The action of the aviation becomes particularly important when the quantities of artillery and mortars are insufficient. It depends, also, on the situation on the ground and in the air, and on the weather conditions when the execution of the counterpreparation has been scheduled.

The most effective altitudes for the action of the aviation are from 2,000 to 5,000 feet. If it has to participate in the counterpreparation in the same zones as the artillery and mortars, it is necessary to suspend the fire of these weapons at the time of the passage of the planes over the targets. In this case the 5-minute bursts of fire of the artillery are separated by intervals of 10 minutes, during which time the action of the aviation will take place. When the aviation acts at the same time as the ground weapons, it will often be against targets farther away than those engaged by the latter or in zones where ground weapon fire is restricted.

The Soviet military literature often stresses the necessity of utilizing all means of fire in all actions of war. For example, rifles and machineguns took part in one of the counterpreparations of 5 July 1943.

It is probable that during the last years of World War II the Soviet aviation would have participated largely in counterpreparations if the forces of the Soviet Union had not been constantly on the offensive. Certainly, the counterpreparation is highly regarded by the Soviets, and will be used whenever the USSR finds herself again on the defensive.

## Geopolitics--Its Present Value

Translated and digested by the MILITARY REVIEW from an article by  
Major Juan de Zavala Castilla in "Ejército" (Spain) June 1955.

THERE has always been a desire to isolate military professionals from the study of the preparation and liquidation of war in order to confine them to its execution, the phase to which their specialty is confined. In the prewar period (preparation) as well as the postwar period (liquidation) we find causes which, while included in specific fields of knowledge and in other human activities, cannot be disregarded by those studying the war phenomenon in its entirety. Unless we are cognizant of them the situation cannot be resolved; neither can its problems be correctly presented. The soldier not only executes war operations but he also prepares, presents, and resolves them.

Of all the men who deal with the business of war it is the soldier who embraces it more broadly and shows more interest in the correctness of its presentation and the adequacy of its solution—thus the identification of the soldier with war. It follows that although there are aspects of war, such as the political, sociological, economical, and juridical, that escape being precisely military, none has acquired the scope or importance of the military aspect which in war has come to challenge the hegemony of the political aspects. A number of historical examples dating from the time of warrior kings to the time of soldier presidents bear proof of this.

Therefore, in our present analyses it is best to consider all aspects normally covering the situation. Among these are the religious, the cultural, the political, the social, and the economic. Let us not forget, however, that these considerations are very close to each other and have narrow ambits as long as we do not extend them to the military. Every estimate tending to lead to conclusions for a strate-

gic order conceived by leaders of countries and blocs of opposed ideology has a definite goal to reach—the military goal. The definition of strategy is the one used judiciously by politicians by which it becomes a general order within which military strategy is a specific aspect.

That is why military strategy is so important and the geographical factor so valuable. Although possible threats of war may be undefined as to locality, because of the broad, general, and almost universal character of war, there is no doubt that *geo*, the earth, will be the setting of all probable actions, whether military, economic, or political.

The need for localizing and uniting these phenomena or actions under the joint denomination of political explains the usage of the term geopolitical science.

Consideration of geopolitics is justified since there arises the need to revise the older concepts of political geography when we consider immediate war, and more concretely, the defense problems of Western Europe and the United States. This revision should be done so as to establish firmly the fundamentals of military concepts closely related to geography. Some of these concepts are the basis of various doctrines and theories for each of the land, sea, and air powers.

### Factors

In order to evaluate the geographical factors, as geopolitics does, one must give initial thought to history, economics, and politics. Anyone wishing to arrive at geopolitical conclusions must first turn to history. Moreover, he must have an extensive, well-assimilated, and related knowledge of it. It is in history that doctrinarians of the various active or

dynamic geography theses seek confirmation of their ideas.

Another factor very close to that of war is economics. Not daring to agree fully that economical problems have been the principal causes of modern wars, we should acknowledge the fact that they have weighed heavily on the development and outcome of wars. Frequently, economics not only causes disagreements among governments but furnishes the material argument which makes possible, and at times necessary, any conflict originating from evident disorders foredoomed to be resolved by violence only.

Permanent peace may be a Utopia, but the fact remains that men of good will are concerned with establishing a world structure which may cease to be a Utopia and become a reality. Peace must rely on equilibrium, and equilibrium is obtained and held only when it can in turn rely on concrete realities. In the final analysis, it is not enough to have established the framework for military equilibrium; we must aspire for political equilibrium. Both military and political equilibrium must rely on economic stability. Geography is of inestimable value to economic stability, for any study of equilibrium necessarily ends with a knowledge or an analysis and comparison of economic areas.

#### Geographical Factors

Therefore, we must acknowledge that if the economic factor relying so directly on the geographical factor is not the sole cause of those unbalanced conditions motivating political disasters and genuine war, it is a material pretext.

A power hostile to any peace plan threatens the world today, creating a series of war dangers which must be warded off by defensive measures. The study of these dangers and corresponding measures must be preceded by a study of factors which relying on geography give rise to the first material determinants upon which

are to be established the strategic, military, and political systems of both blocs—with special emphasis on the Western bloc. It is in this Western bloc where the principal values to be defended are found. Christian religion, Western civilization, and the European concept are menaced, both politically and militarily, by the power representing the new empire of the Soviet Union.

This precipitates an anxiety sweeping the man most isolated from such problems to the brink of one of the greatest cultural conglomerations in which political and economical factors intersect and in which military factors join hands with science and art in an effort to solve the most threatening problems with that forcefulness attributed to war. Its representation, when applicable to the masses, seeks an easy form of ideographical and synthetic expression. Consequently, the geographical factor has been imposed on the cultural ambit of large human groups who, by means of graphic representations supported by space and with the help of charts, figures, plans, and maps, are anxious to decipher all such disturbing problems. The Germans did not create these systems although they did initiate the most perfect geopolitical complex, aided by advanced map techniques and the most modern methods of science and the art of propaganda. We are faced here with a reality today's world cannot ignore.

#### Geopolitics

It is outside the scope of our objectives to attempt to properly present the profound question concerning the philosophical fundamentals of geopolitical themes. It is enough for us to acknowledge one great factor: the direct relationship between what man does as a subject and the circumstances of space in which his actions develop. Since the most important among these actions are included in the political and since the stage is the space,

the ground, the earth with land and water and its gaseous covering, we must interrelate, study, unite, and orient these actions toward a useful synthesis in the realm of geopolitics, and absorb through analysis what political geography, geohistory, and history itself offer us.

If to this we add another factor—that war as a general human act, as a social phenomenon, and as a phenomenon peculiar to some specific groups of men can be reduced to a study, we will have a science called “bellicology” or “polemicolology,” within which the phenomenon, agents, means, or techniques can be taken as objects and from which some sciences, whose strongest link is the joint military techniques derived from fundamental military science and art, can be created parallel to one another.

Let us establish that there is a marked difference between what we accept as facts capable of being scientifically regulated and serving as a basis for activities from which man can never be free, and all the false literature in newspapers, magazines, brochures, and books that man has employed to sensationalize the latest happenings in the countries' economic, political, diplomatic, and military life. Man has even gone so far as to depict in cartoons the religious and social phenomena developed in the various nations and as yet unfamiliar to the outside world.

There is no doubt that warring nations made use of this in recent wars, particularly World War II, with neither side escaping the fever. One country, for propaganda reasons, went so far as to minimize aspects which in a different light could have meant a very useful collaboration of geographical science and the historical political synthesis in government and military men. Here in Spain we have not remained free from these new patterns. Biased aspects of the political and military situation, based on inadequate if not twisted information of the time, have

constantly appeared in anonymous works. They have swayed public opinion and the opinions of study and technical groups who, lacking other sources of information, based their work on what was nothing more than a hodgepodge of old newspaper clippings and propaganda pamphlets circulated with biased informational intent by the organs serving the countries at war.

There remains the indisputable reality that both politics and war depend on the earth. From this fact arises the necessity to form a relationship between geopolitics and geopolemics. That is why, when faced with the pressing problems of today, we study the situation and possibilities of the blocs coming into being and particularize what the countries represent. We attempt to discover their incentives, purposes, objectives in future wars, and how these can be developed if given the status of military techniques and modern combat methods. Finally, we find we have no other recourse in our search for doctrines pertaining to war, peace, hypotheses, and preventives than to rely and base our inquiries into the future on geographical factors.

### Concepts Revised

To focus the series of theories and systems of a geopolitical nature on which the interpretation of the moment or the immediate future is usually based, we must necessarily examine all the concepts dealt with by the men who daringly formulate the laws uniting politics and space.

If geopolitics were nothing more than political geography put into operation, the rather serious tone of such an attempted science could easily be deduced from the origin and peculiarities of this progression. But there is an important question that must not be overlooked. Naturally, we would be satisfied if, among the existing confusion, we could gain some perspective on the essentials and fundamentals intended for geopolitics. The prob-

lem arises, however, the moment we want to give dynamic character to what originally was considered a static form of political geography. To do this we must inject it with history and study the fundamentals of culture and life of the states, towns, and societies which by raising human standards reject the easy solutions offered by irrational determinism.

This revamped branch has been erroneously called "geohistory." Actually, this term does not represent the object correctly since we have introduced the complete present-day political concept, including the military.

Again, we must bear in mind that geopolitics was not the exclusive work of the Germans. The British and Americans have always had an extraordinary interest in the study of international relations problems based on geography. A fact amply demonstrated with the development of doctrines originated by the following geopoliticians, each in his own particular field and style: Mahan, an American, who expounded the elements integrating and supporting naval power; Mackinder, an Englishman, who developed his laws while searching for the answer to the control exercised by the "heartland"; General Douhet, an Italian, Mitchel and Major Seversky, both Americans, who expounded their doctrines on airpower; Mr. Spyckman, an American, who formulated the geopolitical principles of United States power; and Weigert, when he made his much discussed geopolitical synthesis.

Geopolitics came very close to sharing the ultimate oblivion of the Third Reich. Today, we must struggle against the consequences brought about by the German cataclysm. German geopolitics became so confused that from its dignified position it came to be placed at the disposal of the Nazi Party's special kind of politics and, on the wings of the initial German arms triumphs, lost contact with its scientific foundations. It is, therefore, reasonable

to insist that geopolitical facts are not to blame nor should they suffer for the errors of certain geopoliticians who directly served the Nazi Ministry of Propaganda by spreading political teachings which took as their slogan the exaltation of blood and soil, the most exaggerated of racist principles, and political tendencies of the blindest kind of belligerency that not only tended to destroy the very principles of war, but violated the precepts of human rights.

The German Geopolitical School founded by the geographers Otto Maull, Ernst Obst, Siegfried Passarge, and others who followed the ideas of Ratzel, gave geopolitics its greatest impetus. It is, therefore, fitting to state Ratzel's fundamental concepts:

*The state, which is an imperfect organism, is subject to nature and the disposition of the ground on which it develops. It is greatly influenced by the area's relative position. The development of these organisms is governed by laws regulating the functions of birth, growth, and strengthening. In order to grow, the states need the necessary space (Lebensraum) which can be had by appropriating territory from the weaker neighboring nations. Large states can be gradually formed by the concentration of small states. Furthermore, large states need to control the seas.*

We must acknowledge the fact that as the stages on which international political action is to take place and as the directions of probable military actions multiply, both sides make full use of the geographical concepts in the political, economic, and military fields in order to solve the serious problems which are similar wherever they arise.

Major General Haushofer created the sense of struggle perceived in geopolitics, especially German geopolitics, when he designated the conquest of sufficient space as the objective of the state's policy, ac-



cording to Rudolph Kjellen's concepts of the state as a geographical organism and the political activities as phenomena in space.

It is Kjellen who divides political science into five main branches, one of which is geopolitics. He defines the latter as:

*A science of the state as master of space, area, and form; position in relation to the sea and other states; situation changes due to a reduction of power of one or various neighbor states; the influence of geography on foreign policy.*

With these ideas, initially, this science cannot be considered as having been correctly defined; in spite of the causes leading to its development, it lends itself too readily to serious errors and deflections. If Ratzel conceived the state as being with life—a life which although dependent on geography is influenced by all kinds of ideas—it is Kjellen who presents these facts rather as a branch of political law than of geographical science, and so closely related that he even tends to group them with international law and political economics. Nevertheless, the limits between the confines of geopolitics and political geography continue to be indefinite.

Jaime Vicens Vives very modernly divides geopolitical science into specialized branches whose concepts are briefly outlined as follows:

*Geopsyche*—a branch of psychology. As defined by Hellpach it is, "The human soul under the influence of time, climate, soil, and landscape."

*Geomedicine*—relationship between geographical knowledge and the research made on the causes of the principal social diseases. According to Zeiss, it is a branch of medical science that deals with "A study of the pathological processes taken from the viewpoint of its spatial and temporal location on the earth's surface."

*Biopolitics* or *Ethnopolitics* (as stated by the racists)—the most dangerous branch

of geopolitics under whose name the greatest errors and crimes, such as mass eugenics and genocide, were committed. Prudently developed, it would be a speculation based on statistics to show the agreement or disagreement between the human development of a political formation and the aspirations of internal organization and international expansion of the same (the biological potential).

*Geoeconomics*—the prolific branch on the almost virgin soil of economics applied to the rational necessities of a human collectivity. It is connected to military problems and political and economical demands and gives way to autocratic doctrines and to applied war economy as well as to planning in general.

#### Geopolitical Defects

Geopolitical writers have been blinded by the so-called "geographical conditions" to such an extent that they have not considered other conditions or causes which influence the formation, development, and adversities of the human masses, and particularly, the life of the states.

Let us insist that geopolitics can be erroneous, either in its origin if dependent on determinist formulas of an existence previous to it, or in its purpose if it tends to end in pagan mysticism surging from the deification of the blood, the earth, or the state. The concept of this as a biological organism, as a vital super-individual being, in the manner of Kjellen or of Spengler himself, also caused exaggerations in the concept of the economical, social, and political factors.

#### Military Value

Undoubtedly, the earth as a material support of human actions is a very important factor to military actions. However, we should accept its broadest meaning for we cannot refer only to the soil, the earth, the solid exterior cap, but also to the stage on which today's war develops—a phenomenon subject to three spatial coordinates



and capable of being executed in the three material elements—land, sea, and air. After all, this is the meaning given *geo* in words like geography and geopolitics, and not the meaning given it by those who today distinguish a geocracy from a thalassocracy or from an arocracy while speaking of political and military powers. It should surprise no one if we avail ourselves of concepts that today are being called geopolitical, when problems of a strategic order arise—whether strictly military or premilitary and included in the political order.

Reclus can be considered the first to experience this concern, while Ratzel was the first to post the questions concerning the relationship between space and the life of man. These considerations serve as a precedent to the thesis which Mackinder concretely wrote as problems dealing with geographical space.

In the dynamism that the new science imparts to geography, especially as a force which is dependent on space and on the earth to broaden the state's search for "vital space," we see the expression of political transformations that occur in the world—causing many to prophesy that geopolitics is a war arm, a mechanism of imperialisms. Not only can it serve those expansions considered just but it can also serve any ambition for expansion and any expansion in a search for power.

In this sense, there is a certain analogy between geopolitical science and military geography. If the concepts of the former have gone awry with spurious objectives, they have been usefully applied to the undeniable reality of wars. That some concepts dealt with by geopoliticians are censurable from a moral viewpoint, does not mean that many other concepts have not had to be analyzed as a basis of geographical military studies, since the vastness of space and the totality of means characteristic of modern conflicts, have forced us to fight simultaneously in var-

ious parts of the world. In addition to this diversity in spatial theaters, we must consider another diversity, that of action fronts which however much they may differ from one another entail certain coordination in command. We refer to political, economic, and social action, to action of an internal order, and to that fittingly military—land, naval, and air—whose close relationship implies that today wars more than ever before demand a capacity, a potentiality which must be controlled by adequate General Staffs.

Military geography has never limited itself to describing theaters of operations. It is also prepared to solve all problems created by war; making analyses and syntheses, plans and resolutions of all that "land" factor in military terminology.

Consequently, we will have to consider that geopolitics is closely related to military studies, especially those of a geographical nature. Such a science is the study of the "intelligent use of our own territory"—the art of governing, administering, harmonizing, preparing, uniting, and using the land, the resources, and the human activities upon it—viewing all that might occur without forgetting military necessities, for the recourse to arms for a just war and always for the defense of one's country should never be ignored.

Geopolitics has an undeniable interest in things military. The elements with which it deals are closely related to professional knowledge of military science. No one can deny that geopolitical conceptions—save for those censurable aspects, obscurities, confusion, inaccuracies, and errors—are the basis of strategic decisions as has been evident in recent conflicts. Therefore, the ideas of Mackinder, of Haushofer, and of the Americans themselves offer useful teachings to the military and serve as a basis for the preparation and execution of war.

Obviously this conception of geopolitics, once cleansed of initial aberrations,

does not correspond to that held by those who conceived it. Nevertheless, it is an indisputable fact that the problems arising, no matter where, find a relationship between the people and the land factors, represented by the economic and biological relationship—vital space—or communications and transportation, but always with an eye to the argument over superiority or influences in the commercial, cultural, or religious fields. Throughout, it will consider the peoples' capabilities, their development, the fact of the states, and the atmosphere in the superstates which may be created meanwhile.

Obviously, if geopolitics is the science of the state considered as a living organism, the phenomenon of war must be considered of utmost importance, because during peacetime the strong contrast and difficult experiences significant of war are missing from political actions. It is in war that the forces of biological factors and the particularities of government are verified since an opposition exists which surpasses the resistance of economics, carrying the dispute to the battlefield.

Geopolitical questions are not only an asset to war but, properly applied, they can be of service to peace. This involves the utilization of the economical, political, social, racial, and cultural elements dealt with in this science with different objectives previous or subsequent to military ones.

In this way geopolitics may be the foundation of the science of good government—and its art—in peace; for not only will its teachings serve conquest, exploitation, and defensive objectives, but these teachings can also be conducted toward the establishment, consolidation, and defense of a superior, moral, juridical, and political order representing civilization. It will help to assign the role of each state and of each town in the harmonious totality of a superior group, thus clarifying those problems of an internal order whose re-

sults will be decisive to the welfare and prosperity sought.

### Theory of Military Powers

If one admits the fatality of war as an act which frequently climaxes a political scheme bent on carrying out its objective in spite of the opposition from humane groups, one will understand the importance of being aware of the influence that military power has on the development of social events. The study of history together with an accurate knowledge of the present political, social, and economical realities enables us to interpret the results obtained from the military factor as an instrument of power and to apply them to present problems.

While there currently appears to have been a weakening of the influence exercised by the armies as institutions playing a part in the internal balance of states, their influence has increased in the decisions of an international character. This and their direct dependence on the country's resources and economic and industrial potential has created a complexity never dreamed of before.

For the time being, we must highlight the addition of the new airpower to the older land and seapowers. Airpower not only increases the actual strength of the other two powers but it is a ready source of an extraordinarily powerful new arm with great political influence to countries waging war.

Before airpower made its appearance, warfare—or preparations for it through the disposition of land or naval forces—had already created different viewpoints. The elements principally used in war, fire and maneuver, are not always the same, and when they are they cannot be used in the same manner on land or on sea. Delving deeper into the question, it is clear that there is no definite analogy in the methods employed. Tactics and strategy present different aspects.

If we were to speak of land warfare

alone, with limitation on the other elements because of the exclusive presence or great superiority of land forces, tactics would prevail. It is on the sea where there are no fronts or where they are not continuous that action predominates in the form of potential attitudes or protracted and distant pressures. There, the "strategy of great extensions" is revealed. These statements are clarified when we recall that Napoleon preferred to use the phrase "grand tactics" to designate the movements of his armies in land campaigns, using the word "strategy" when speaking of higher conceptions and objectives.

Today, with the air factor supporting land battles, naval battles, or in its full and independent exercise of power, there is greater differentiation. Altitude, a new dimension, has been introduced making war tridimensional. With it, the coordinate of horizontal depth is increased, carrying fire and maneuver—not to mention vertical envelopments whenever possible—to greater depths, as well as offering the perfect means for delivery of the new modes of destruction right to the heart of the enemy.

In general, this military power is com-

posed of a series of diverse elements which should be taken into account for better comprehension. First, there are those of a geographical nature; that is, the country or bloc's relative situation, physical contour, climate, resources, and size. The population is considered, evaluating not only the quantity but the quality of the human element composing it. We also have the resources, industries, and economic potential. This should be followed by an interpretation of foreign policy. Finally, come the elements or factors inherently military, such as the character of the military institutions, organization, and quality of its armies and war doctrines.

There is an integration in these military power factors that passes from the geographical, physical, and economical to the human: population, organization and functions of this economy; political orientation, military institutions, and the means and procedures employed. In this discussion, we have limited ourselves to considerations more directly dependent on geographical factors, and only to support these considerations have we referred to other technical, military, or political concepts.

#### AN ACKNOWLEDGMENT

In the October-December 1955 issue of the U.S.I. Journal (India) there is the following acknowledgment by Major General B. M. Kaul concerning the article "Studies in the Art of War" which was digested in the September 1955 issue of the MILITARY REVIEW:

"Parts of pages 114, 115, 117, and pages 118 to 120 in my article 'Studies in the Art of War' published in the U.S.I. Journal for October 1954 were from Captain Liddell Hart's *Strategy: The Indirect Approach*. Assistance was also taken from the book *Rommel* by Desmond Young. To both these authors I owe grateful acknowledgments."

## The Evolution of Soviet Armored Principles

Digested by the MILITARY REVIEW from an article by Guards Major M. F. Vassilieff in "An Cosantóir" (Ireland) October 1955.

THE adoption of tanks as part of the armament of Soviet armies is a story in itself. Before 1928 the Red Army possessed no tanks of native manufacture, and there were only a few dozen captured tanks remaining from the time of the civil war. In 1927 the first tank school was opened to train an establishment of officers of intermediate rank. In Leningrad in 1930 refresher courses were started to prepare officers and tank crews; and in 1933 there was founded in Moscow the *Stalin Academy of Motorization and Mechanization of the Workers' and Peasants' Red Army*.

Until 1940 the quality of the tank forces of the Soviet Army was remarkably low in comparison with foreign armies. But already, despite the comparatively short space of time for development, the basic designs of the tanks of native manufacture—for example, the *T-34*, *KV-1*, and *KV-2*—were far better in quality than foreign models.

In regard to use of tank forces in battle it should be noted that military thinking in the Soviet Union was still based on the experience gained in the *Russian Army* in World War I. The ideas then prevalent were strengthened by the fear that in a future war the struggle would again take on a tight positional character, as occurred during the years 1914-18, and that a penetration of a deep defense could not be achieved because the tempo of attack would be slower than the speed of concentration of reserves coming up to "seal off" the tactical breakthrough. The experience of the first successful tank actions fought on the Western Front in 1917-18, however, gave rise to the opinion that it was the tank which would prove to be the means of turning a war of position into one of movement. The availability in

Russian translation of the works of the well-known theorists on tank warfare, Fuller and Aymansberger, were responsible to an important degree for the emergence of these views in military thinking in the Soviet Union.

It should be said that prior to 1931 the battle role of tank forces clearly underwent a reassessment. At that time the theory in vogue was to impose on the tanks the task of operating independently deep in the rear of an enemy, and to a great degree separate from the forces conducting the frontal attack. The conviction grew that the idea of organizing massive tank armies to act in the operational rear of the enemy was the correct one, and this was vindicated during World War II, especially in the closing stages.

### 1931 Maneuvers

The first "all-arms" maneuvers on a large scale were conducted in 1931. On the basis of the experience of these exercises, and of the study of other great military exercises of the period 1931-33, the General Staff of the Soviet Army were enabled to provide for that era a very satisfactory solution to the problem of the role of tank units in battle. Further, as already indicated, the lessons of operations in the West in World War I and of the great military exercises of 1931-33 were accepted in the Soviet Union.

It has already been indicated that the tanks of that time were little adapted to surmounting a system of artificial obstacles incorporated in a completely organized defense belt without assistance, where that system included antitank artillery weapons. There remained, therefore, the task of effecting a breach in any powerfully developed tactical defense

so as to launch the attacking infantry.

During the years 1932-33 the General Staff of the Armed Forces of the USSR assigned itself the task of including in the Order of Battle, for the purpose of achieving a breakthrough, three groups of tanks: those which would give immediate support to infantry (NPP); those which would give distant support to infantry (DPP); and those intended for distant action (DD).

Contemporaneously with this, during the period from 1931 to 1937, a maximum allotment of tank units to the forces was laid down. Thus, for example, in a rifle brigade there was included a light tank battalion and in a rifle division, a heavy tank battalion. At that time, too, purely tank formations were being created, brigades, divisions, corps, and later even complete tank armies.

### Battle Planning

In the Soviet Army battle plans for infantry and artillery groups the following tank tasks were defined:

1. *NPP (close support) tanks.*—The normal allocation was one tank company to each rifle battalion of the first echelon. These tanks were to engage the fire positions on the forward edge of the enemy defenses. The infantry was to move up immediately after the tanks, separated from them by only 150 to 200 yards, right up to the point for going into the attack. When the infantry had advanced to a depth of 800 to 1,000 yards, the NPP tanks were to regard their task as completed and draw off to an assembly point, usually on the line of the enemy's former main line of resistance, covered from enemy artillery fire.

2. *DPP (distant support) tanks.*—The normal allotment was 2 or 3 companies to each rifle brigade in the attack. These tanks were to throw themselves directly into enemy company and battalion centers of resistance at a depth of 1 to 1.5 miles

from the enemy's main line of resistance and there engage machinegun batteries, observation posts, and single guns disposed through the defense system. The second, or shock, wave of the attack was required to cooperate closely with the DPP tanks, whereupon the latter were to be converted into NPP or close support tanks for this second wave.

3. *DD (distant action) tanks.*—The normal allotment was 1 or 2 battalions—not more than two for medium tanks—as the attack unit of a rifle division. The DD tanks, moving out from a line of departure, were to pass ahead of the infantry and other tanks, not delaying to neutralize the separate points of resistance, but pressing on deep into the enemy gun area, with the object of overrunning the artillery and command posts.

The artillery was to fulfill its task in relation to distant and close support tanks by sheltering them from the artillery and antitank fires of the defenders, maintaining a *curtain of fire* in front of the advancing tanks. On the flanks of the axis of advance the artillery was to put down blocking fires with the initial suppression of the fire system of the defenders taking the form of an artillery preparation lasting from 30 minutes to 1.5 hours. At the end of the preparation an air raid was to be conducted along the main line of resistance. From the beginning of the infantry attack the artillery would shift its fires to the enemy rear when it acted in the interests of the close and distant support tanks.

These Soviet Army plans for the employment of tank groups in penetrating enemy defenses need to be amplified regarding the theory of employment of tanks for fighting deep in the rear against enemy operational reserves. The mission of fighting these reserves was customarily carried out in the following manner: after the entire "tactical" depth of the enemy had been penetrated and neutralized—



that is, when the infantry had penetrated 2 or 3 miles—the *DD* tanks, and sometimes individual *DPP* tanks, were to gather in one assembly area, the commanders and staffs placing themselves at the head of the assembled tanks. The brigades, or divisions, thus assembled developed a deep attack, choosing as objectives the important points in the rear defensive area and the advancing reserves of the enemy.

### Characteristic Features

Thus, as was already noted before 1937, the employment of tanks in the Soviet Army was aimed at the simultaneous suppression of all tactical enemy defenses up to a depth of about 5 miles. Objectives situated at a greater depth than this were neutralized by air attack and afterward suppressed completely by tank forces regrouped for that purpose. As a result of the school study of the employment of tanks in battle according to the established formula, it became clear that there were these characteristic features.

At the time of an attack, tanks were dispersed through infantry tactical groups and their chief characteristic—shock power—was lost to a great extent.

Large formations (brigades and divisions) of tanks, at the very moment of greatest strain in battle, ceased to exist for all practical purposes. The staffs of tank brigades and divisions placed themselves in a somewhat supplementary role on the staffs of rifle divisions and corps, and the staffs of tank corps attached themselves to the staffs of armies in the role of advisors-on-tank-matters to the commander of the infantry formation.

Dispersal of tanks along the entire front of the attacking forces meant a like dispersal of artillery. Scattering of tanks in this way led to great losses.

The value of gathering together tanks, hitherto disposed through infantry groups, into brigades, with the object of attacking enemy reserves on their way forward remained problematical. Practice showed

that, even under the ordinary conditions of training—that is, without the influence of hostile fire—the assembly of a tank brigade required from 3 to 6 hours.

General Pavlov, from 1935 to 1937 commander of the 5th Tank Brigade stationed in White Russia, who had participated with a unit of his brigade in battles in Spain (where he was chief advisor on the employment of tanks to General Miaja, commander of the Republican forces) was considered in the Soviet Army to be the unrivaled authority on tank matters. With the support of Stalin he achieved the breakup of some tank corps on the basis of his experience in Spain where small groups of tanks, in the nature of tank battalions, had successfully operated.

The General Staff of the Soviet Army opposed this breaking-up of large tank formations. They further insisted on the liquidation, in the system of battle formations, of the attacking *NPP*, *DPP*, and *DD* groups, to give place to a single tank group. This group would act on a divisional front in the attack, would be required to operate with no formation lower than division, be subordinated only to the corps or army commander, and operate according to the corps or army plan. Responsibility for fire support of the tank group was allotted to the artillery of corps or army, while the group itself was to operate along the main axis of attack for the breakthrough. The normal allotment of tanks, however, remained as before, that is, not more than two brigades per divisional front.

At the end of 1937 and beginning of 1938 a number of instructional problems were worked out on the basis of this type of tank action, in the General Staff Academy, in the Frunze Academy, and in the Academy of Motorization and Mechanization, and a set of training exercises was produced for the forces. As a result, from 1938 to 1940 this method of employing tanks in one tank group per division was



given sanction by order of the People's Commissariat for Defense in place of the previous scheme of dispersal along a front. A massing of tanks on a comparatively narrow but decisive front was decided on by which the firepower and striking power of the tanks would be raised. Secondary sectors either would have no tanks or would be allotted them only in limited numbers.

On the sector of the formation carrying out the main attack, usually a corps of 2 divisions on a front of 3 to 4 miles, 2 tank groups of a strength of from 2 to 3 brigades were to operate. The artillery of both divisions, together with corps and army aviation, were to act with the tanks, the battle as a whole being planned by the corps staff.

Tank density on the decisive sectors of the breakthrough was raised to 90 to 120 tanks on a 1,000-yard front, whereas the former density on main axes of attack never exceeded 30 to 35 tanks.

The plan, after the successful breakthrough, was that the tanks, depending on circumstances, either pressed forward to the capture of various objectives in the rear defense areas, or engaged the enemy reserves as they came up, in cooperation with air action and parachute landings. Emerging into the enemy rear, they delivered blows from there, and jointly with the forces attacking in front, wiped out the points of enemy resistance.

Study of this method of employing tanks led certain Soviet Army leaders to devote attention to another problem, namely, that of engaging the enemy reserves far to the rear, especially those which, at the moment of attack, were situated at a distance of 30 to 45 miles away. They came to the conclusion that aircraft was the weapon to use against these reserves, even though it could do no more than slow up their advance. While presenting these questions the General Staff of the Soviet Army had already formulated the solu-

tion, based on the fact that it is impossible to impose the execution of two tasks on one and the same tank group. Once the necessity for fulfilling the second task was admitted, the solution was seen in the imposition of this task on an operational formation already in the hands of the army or front commander, and distant from the tank group just mentioned, namely the "breakthrough echelon."

The disposal of this breakthrough echelon could be at army or front level. Two tank divisions were included in the make-up of the army echelon as well as one motorized rifle division. Later, when tank corps began to be created in the Soviet Army, such corps were included in the echelon and were strengthened with a motorized rifle division plus covering and supporting units, self-propelled artillery, antiaircraft batteries, antitank batteries, attached engineer and pontoon battalions, signal units, and others.

At army level the echelon group is brought into battle at the internal junction point of the two attacking corps; likewise, at front level it appears usually at the junction of the two attacking armies of the front.

Used in this manner the basic task of the breakthrough echelon was the extension of the breakthrough; from the outset it breaks through the rear defensive strip—1 to 1.5 miles from the forward line—and moves on out 20 to 25 miles toward the end of the first day. The morning of the second day it either regroups for battle or moves on to block or destroy the approaching enemy reserves. (The latter variant was always adopted if it were observed that enemy tank units were coming up.)

Regroupment amounts to this—the breakthrough echelon assembles to deploy *backwards*, under cover of its motorized rifle division, surrounds the strong points of enemy resistance, and, in conjunction with the units attacking in front, de-

stroys them. The next operation of the echelon is the capture and retention of the most important objectives—river crossings, main road and rail centers, and other places.

Up to the moment of the general attack, the breakthrough development echelon is located on line of departure or jumping off ground in attack formation. The distance separating the jumping off ground from the enemy's main line of resistance is figured; in the exemplary case, at from 5 to 7 miles. The time for the entry into the breach made by the other forces is established when the infantry penetration has reached 2.5 to 3.5 miles, that is, when the infantry-tank group combination is in possession of the main enemy gun area.

The echelon moves out from the line of departure in compact formation, in battle order, in 5 to 7 columns across a front of 3 to 4 miles. In the flank columns and at the head of each column move the tank units and self-propelled artillery; the motorized columns occupy the center, and the staffs follow these. The columns include a limited number of mobile repair shops and the necessary supplies of ammunition and fuel. The bulk of the rear echelon remains in the jump-off area and joins the units only at the end of the second day, and possibly even much later.

Army aviation and artillery of all types assists by interdiction and screening fire.

The coordination of movement with the artillery and aviation protection is brought about by sending back observations by radio and communication aircraft.

Often, depending on weather conditions, the axis of movement of the echelon on one of the fronts is covered by a complex patrol of fighter aircraft. Besides this, the basic composition of the column includes the antiaircraft artillery battalions.

The plan for the entry of the echelon into the breach and its plan of action for the subsequent 48 hours provide for care-

ful correlation of these basic operations:

1. Prolonged reconnaissance, in conjunction with the infantry, artillery, and air commanders, of the proposed zone of advance.

2. Careful reconnaissance of, creating camouflage for, and defense by fire of the "assembly" and "departure" areas.

3. The laying out (which includes preparation of all types, engineer as well as administrative) of the roads or routes to be followed by the echelon from the assembly to the starting positions.

4. The reserving of roads and routes and clearing them of other troops for the breakthrough echelon to move out onto the line of departure and from this position forward. This amounts to an administrative order for passing the echelon through its own forces.

5. The plan of action of the artillery for following the advance of the echelon into the breach and beyond.

6. The plan of action of aviation for guaranteeing the advance through the rear defenses, that is, cover by fighter aircraft for the attack on individual objectives.

7. The plan of action after the first 24 hours, not only of the units of the echelon, but also of aviation and artillery.

8. The plan of supply of fuel, ammunition, and food and the plan of evacuating wounded, and the use of aircraft for these purposes.

9. Plan of control in relation to forward and lateral limits and times.

During World War II the organization and tactics of tank forces went through four phases:

1. From the beginning of the war to November 1942.

2. The campaign of the summer of 1943.

3. The autumn-winter 1943, spring 1944 campaign.

4. From the beginning of the summer campaign 1944 to the end of the war, May 1945.

The *first phase* is characterized by heavy losses of men, and matériel in the Soviet Army and the withdrawal to the east. Two tank operations may be noted, one in June 1941 on the southwest front, and the other in May-June 1942 in the Kharkov region.

The *second phase*, that is, the summer campaign of 1943, is famous for the fact that the battle was characterized by stubborn and bloody encounters for every separate tactical objective. In fact, the German front was not penetrated but was gradually worn down. Every foot of ground was contested with the result that the German units gradually but inevitably disintegrated.

A characteristic of the Soviet Army organizational structure of tank forces in 1943 was that there were no large tank formations, a fact which is explained by the lack of the requisite reserves. The basic unit of the organization at the time was the tank brigade, small in numerical strength, of from 71 to 98 fighting vehicles. A feature, however, that emerged in the battles of 1943 was that certain "tankborne landings" conclusively achieved their objective. These were raids made by parties of "storm" and "block" troops carried on the hulls of the tanks. These detachments were delivered to enemy pillboxes and casemates which they were required to blow up and destroy.

The *third phase* embraces the battles for the capture of Kiev and Korosten, the battles in the Krivoi Rog and Zhitomir regions, on the line of the Mius River, and the liberation of the Crimea and Odessa.

The *fourth phase* begins with the advance of the Soviet forces on the White Russia front and concludes with the battles for the capture of Berlin. This phase is distinguished by the fact that the steadfast resistance of the German forces was broken down. The deep rear of Germany was paralyzed and in the end the second front was opened by the landing of the

Allied forces in western France. The Soviet tank industry developed its greatest productive momentum at this time and the Soviet Union was receiving a great quantity of war material from the United States.

### Conclusion

The four stages analyzed above, through which the tank forces of the Soviet Army passed during World War II, show clearly that the Soviet Command had found the correct solution of the problem of the employment of tanks and that they were justified in drawing the conclusion that there is no necessity to disperse tanks along an entire front; they should be employed *massed together in the decisive direction*.

While speaking of the course of military operations carried out by the Soviet Army in the second half of the war, it should be said that, beginning with the Stalin-grad struggle, the High Command of the Soviet forces put into effect new forms of attack operations, with groups of tanks in formation of many successive echelons in the direction of the decisive blow. This made possible the delivery of blows cutting up the enemy to a depth of 250 to 300 miles, and having a fast tempo of movement—achieving anything from 15 to 20 miles in 24 hours.

At the present time, a tank corps in the Soviet Army shows the following organizational structure: corps staff; 4 to 5 tank brigades; 2 regiments of self-propelled artillery; battalion of 122-mm mortars; guards battalion of multiple rocket projectors, *Katyushi*; reconnaissance battalion; engineer battalion; antiaircraft battalion; signal battalion; salvage-repair battalion; medical battalion; and units of the rear (for supply and evacuation).

In the establishment of the tank brigade are included battalions of tankborne storm troopers armed with submachineguns. The number of fighting vehicles in the brigade varies. There are brigades of 100 vehicles, while others have as many as 230.

## A Realistic Arctic Strategy

Digested by the MILITARY REVIEW from an article by Squadron Leader Peter W. Ellis in "Air Power" (Great Britain) July 1955.

LATELY there has been much written about a "new vital strategic area," the Arctic. It is suggested that the ability to fight and fly in this area is indispensable to Western security. This is an exaggeration which has probably grown from the layman's realization that there are other maps beside the conventional Mercators of his school days. Projections showing the United States and the Soviet Union facing each other over the North Pole are now fashionable. It is necessary that we in Great Britain are not misled. The strategic importance of the Arctic must be realistically appreciated as Great Britain can only afford the essentials of war; there is no money for extravagance.

Strategy is the art of projecting and directing the larger military movements and operations of a campaign. First, we must determine what will be the major military operations in the only likely form of hot war, one with America and the USSR as the chief combatants. Then, consideration should be given as to how this over-all strategy affects the Arctic. In order to minimize fantasy, the time period should be restricted to the immediate future, before the era of unlimited-range guided missiles.

Initially, it must be realized that the building in the Arctic by the USSR of railways and towns, and by the Americans of airfields and radar stations, is unlikely to provoke minor peripheral wars. The Arctic is a large, empty, and undeveloped region, and there is ample room for all the interested parties to exploit their territory with little risk of conflict. There are no masses of primitive people on whom it is worthwhile waging ideological war. The only "cold war" likely to be fought is against nature, not man.

This will be a hard fight; the operation of aircraft, fighting equipment, and men in the extreme cold creates many difficulties which can only be overcome by complicated and expensive techniques. To make Arctic warfare worthwhile some potent military advantage must be gained thereby.

Whether begun by design or accident, it is fairly certain that in the next hot war the major military operations will be as follows:

*America and the USSR will immediately launch a strategic bomber offensive against each other's main industrial centers and strategic bomber bases.*

*At the same time the Soviets will invade Europe.*

The duration of war will depend on the capacity of the two major combatants to absorb thermonuclear punishment. If, as seems unlikely, it lasts for several weeks, not days, then in order to stem the Soviet land offensive and maintain strategic bombing momentum, America will need secure sea communications serving Europe.

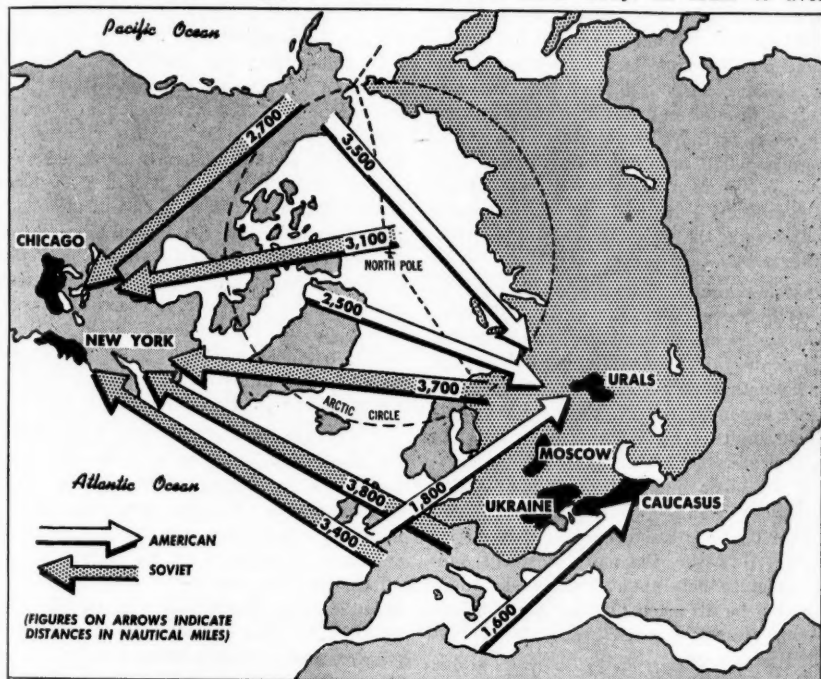
### The Air Battle

How does this affect the Arctic? First, consider the opening, possibly decisive, air battle. The Soviet long-range air force at present consists mostly of *Tu-4's*, piston-engined bombers similar to the obsolescent American *Superfortresses*. The *Tu-4* could probably carry an atom bomb to a radius of action of 2,000 nautical miles. By about 1960 the Soviets are expected to have many intercontinental bombers of the *Tu-104 Badger* type. The popular press, a reasonably reliable intelligence agency, supposes that this bomber could operate to a radius of action

of about 4,000 nautical miles. The *Bison*, long-range equivalent of the United States *B-52*, is also in production and can be expected to increase still further the radius of action.

The Soviet bomber's target, American

Soviet bombers would probably operate from bases as near as possible to America's industrial complex. If situated in Eastern Europe or Arctic outposts of the USSR, these bases would be about 3,800 nautical miles away. In order to avoid



## DISTANCES AND ROUTES BETWEEN MAJOR INDUSTRIAL TARGETS AND BOMBER BASES

industry, is mainly about New York, Philadelphia, Cleveland, and Chicago. Even today, when considering the striking power of a bomber force, range is still, and may be until the guided missile era, a limiting factor. The shorter the distance to the target, the greater the bombload and, what is more important, the ability of the bomber to feint and deceive or avoid the enemy defenses. Therefore, the

enemy Europe, the Soviet long-range air force might prefer to operate from the Arctic bases and fly over the North Pole. America's Strategic Air Command (SAC) now has a large force of *B-47* jet bombers and the even more effective *B-52*. These aircraft can probably carry the hydrogen bomb up to a radius of action of 5,000 nautical miles. SAC's targets, the important Soviet industrial areas, are



about the Urals, Moscow, the Caucasus, and the Ukraine. The USSR has other smaller industrial areas and is attempting to develop industries in northern Siberia; nevertheless, during the immediate future the Soviet Union will be most reliant on these four old-established industrial regions. Whenever possible, SAC would operate from bases much nearer to its targets, although America has aircraft with sufficient range to attack, from the heart of the United States, Soviet industries 5,000 nautical miles away. Airfields in Western Europe and the Middle East are only 1,000 to 2,000 nautical miles away from the major Soviet industrial centers.

Attacks against industry would only be part of the opening air battle. Of more immediate concern would be attacks on the thermonuclear bomber bases. Obviously, the Soviets would concentrate their counterbombardment attacks on the SAC bases which could hurt them the most, those in Europe and the Middle East. The Americans would do likewise; their main counterattacks would be against the Soviet bomber bases in Eastern Europe or Arctic Russia. However, the more westerly Arctic airfields, those about Murmansk, would probably be attacked by SAC aircraft operating from Western Europe, the nearest allied base area.

So far, it is apparent that in a short hot war the operation of strategic bombers from Arctic airfields would be limited. Today, the Soviet Air Force lacks an aircraft capable of attacking American industry without resorting to suicidal one-way missions. The *Tu-4's* would mainly operate in Europe and the Middle East and Soviet Air Force intercontinental bombers might operate from the Arctic area in order to avoid Western Europe's air defenses. The United States Air Force would probably operate most of their intercontinental bombers from European and Middle Eastern bases. They would only

operate from the Arctic in order to attack any threatening North Siberian airfields which could not be efficiently hit from warmer and more convenient bases.

### The Land Battle

To complete a study of future strategy we should consider the unlikely event of a thermonuclear war lasting long enough for land battles to affect matters. The main aim of a Soviet invasion of Europe would be to overrun the American SAC bases and, at the same time, move her own bomber bases nearer, to within 3,400 nautical miles of the New York-Chicago complex. In this case, SAC would be forced to operate from America and fly over the Arctic to Soviet industries 5,000 nautical miles distant. However, if based in Alaska or Greenland, the bombers would be only 2,000 to 4,000 nautical miles from the main USSR industrial regions, a worthwhile saving in flight distance.

There are other, perhaps easier, ways for the Soviet Union to move her bombers nearer to American industry. She could invade nearby Alaska, less than 3,000 nautical miles from the New York-Chicago area. Easiest of all, the USSR claims all the territory on her side of the North Pole between Murmansk and the Bering Straits; in peace she could build advanced staging and refueling bases for her bombers on the polar cap, also only 3,000 nautical miles from New York-Chicago. Today, the USSR has a few scientific stations on the polar cap and on floating ice islands; at present they are mainly used for taking weather observations.

If the United States built similar advanced bases on her side of the North Pole, they would be no nearer to Soviet industry than Western European airfields. Nevertheless, the United States Air Force is now investigating the feasibility of flying from temporary ice strips on the polar cap, no doubt as an insurance should Europe be lost.



Finally, there is the movements aspect of Arctic strategy; this also would only apply to a comparatively long war. Because of the naturally restricted land and sea communications, air transport would play a large part in supplying Arctic air bases, especially any built on the polar cap. Thus naval fighting would be more limited in the Arctic than elsewhere. The United States is unlikely to bother much about the Soviet northeast passage; these sea routes are already severely obstructed by ice, and alternative railways are being built. Perhaps the only notable naval actions in the Arctic would take place underneath the sea lanes between America and Greenland.

#### Strategic Considerations

Thus it is concluded that the following are the important points regarding Arctic strategy for a hot war:

1. The Arctic might become a transit area, an air ocean for long-range thermonuclear bombers. It would probably be narrowed by America and the USSR building advanced refueling or staging bases on the polar cap.

2. America's greatest need to use this

ocean would occur if Europe were lost, in which case SAC might operate from Alaska or Greenland in order to shorten the journey to the target.

3. The USSR cannot use the ocean at present. With her new intercontinental bomber the Soviet long-range air force might operate from Arctic Russia until Western Europe were captured.

4. The USSR might invade Alaska, especially if she met stiff resistance in Europe. Her aim would be twofold: to move her bombers nearer to their target, and to divert American attention from Europe.

5. As an insurance, both America and the Soviet Union need ready air defenses covering their Arctic flanks. Therefore, they must position fighter bases and radar stations in the Arctic.

At present, we in Great Britain need bother little about Arctic warfare. In the next hot war we will first have to fight in Europe and the Middle East, theaters of more immediate and vital concern to us. If we lose the second Battle of Britain, then that is the time to concern ourselves with the Arctic, in which case we could justifiably ask our American and Canadian allies for any advice needed.

## Some Reflections on Disarmament

Digested by the MILITARY REVIEW from an article by Captain D. J. Goodspeed in the "Canadian Army Journal" January 1956.

THE day is long since gone when the ideal army was a rabble of cutthroats led by nobility and when neither the officers nor the rank and file knew or cared much about the broader issues which decided peace or war. The modern soldier is only too well aware that his profession requires him to take more than a passing interest in great events. Some form of political indoctrination and an interpretive account of current events is included in the training program of all modern armies. Thus the entire question of disarma-

ment which was raised at the Summit Conference in Geneva is one of the subjects which must be of concern to soldiers.

This interest of the soldier in disarmament springs from a variety of causes and not merely from an ignoble apprehension for his livelihood, for the older professions, despite all the efforts of enlightenment, have a knack of hanging on. Yet any disarmament which changes the relative power of nations is bound to create new strategic problems, while any drastic limitation on the size or equipment

of military forces is certain to pose complicated technical questions which the soldier must use his ingenuity to solve. The doctrine of the blitzkrieg, for instance, would probably never have developed if Von Seeckt and his fellow planners in the *Truppenamt* had not been forced to consider how a small, elite, 100,000-man *Reichswehr* might best solve the military problems of the Weimar Republic, nor would a pocket battleship ever have left the slips at Wilhelmshaven if it had not been for the restrictions of the Washington Naval Treaty.

Nevertheless, nothing could be further from the truth than the common idea that military men are by nature inimicable to the entire concept of disarmament or to those wider aspirations for peace which inspire it. Quite the contrary is the case, for the soldier who has seen war and knows it has more cause than most to abhor it. Those who jest at scars are proverbially those who have never felt a wound. Still, just because it concerns him so deeply, the professional soldier is apt to look somewhat more searchingly into the matter than the average civilian. And in any such inquiry we must try to illuminate the path of the future with the torch of history, if for no other reason than because there is none other to lighten our darkness.

Disarmament may be simply defined as the reduction or limitation of existing military forces, and these restrictions may be applied to manpower, weapons, or equipment. All attempts to disarm potential enemies, even in the context of reciprocal disarmament, have the same aim—national security.

It is obvious that military forces should be maintained only in proportion to the threat which is believed to exist. Thus armament and disarmament are in a sense the two sides of the same coin, for nations always build up their armed strength with at least the plea of self-defense and en-

deavor at the same time to limit the forces of potential enemies for the same reason.

### Approaches

Up to the present time three different practical approaches to disarmament have appeared in history, all of which spring from the same instinct of self-preservation. Any claim that the historical manifestations of this instinct have become progressively more humane is only superficially plausible. Although there was a Truce of God and a code of chivalry which did much to limit wars in the Middle Ages, the last Crusaders were guilty of the horrible sack of Constantinople. Although there was a Geneva Convention and a wealth of liberal humanitarianism in the 20th century, the gas ovens of Belsen and Buchenwald are mute denials of the universality of such ideals.

The three types of disarmament which the world has actually experienced may for the sake of convenience be called Disarmament by Extermination, Disarmament by Imposition, and Disarmament by Negotiation. A fourth concept which visualizes a world not only without war but also without armies has never been more than an ideal, for neither past history nor present politics can encourage a belief in the immanence of so blessed a condition of affairs.

### Extermination

The idea of disarmament by extermination goes back to the dawn of time and probably accounts for the disappearance of most of the "lost" civilizations. The flaming towers of Troy and the buried culture of Crete were the result of this approach to national security. In this stage man gives way to his most primitive instincts and completely destroys his conquered foe. He makes a desert and he calls it peace. The implacable spirit of Cato who saw to it that salt was ploughed into the soil of Carthage and the savage reaction of the white pioneers to the defensive attacks of the North American Indians are

equally examples of this school of thought. The historian, as he scans these records, recognizes their bases of human fear—nor is the philosophy yet dead, as the Nazi attempt to provide a “permanent solution” to the Polish problem proves. If Hitler failed where Cato succeeded, it must be remembered that he had the more difficult task.

Whatever we may think of extermination as a method of achieving national aims, we must admit that in the past it was often successful. Even the Nazi attempt to wipe out both the European Jews and the Poles came closer to success than some would imagine, especially in the case of the Jews. What caused its failure was certainly not the absence of a clear-cut policy nor a lack of ruthlessness in administering it. Even less is it true that the evil aims of Hitler failed because of passive resistance within Germany herself. There was undoubtedly such resistance, but it was, on the whole, quite exceptionally passive, and no amount of *innere emigration* could possibly be of help to the victims of Nazi persecution. Indeed, although the majority of people in any civilized state are unlikely to approve of genocide, it would be unwise ever to count on this as an effective safeguard.

Certainly any absolute ruler who desires it can recruit his murder squads. While it is true that nations are larger today than at the time of the Punic Wars and that more killing is, therefore, required to achieve the goal of extermination, it is also true that the means of mass execution are more efficient. The means have kept pace with the end, and the gas chamber and the crematorium are to the knife and the noose as the atom bomb is to the bayonet.

No, the Nazis failed in this, as in all their other aims, primarily because the coalition of embattled nations ranged against them did not allow the New Order

the time it required. A secondary reason for failure was because the political rulers of the Third Reich were basically an unintelligent lot. Cato may have been as pitiless as Himmler, but he was also a good deal brighter.

It is, nevertheless, a historical fact that the policy of disarmament by extermination was for many centuries abandoned among civilized nations—at least insofar as they themselves were concerned. (The Incas, the Maoris, and the American Indians might conceivably bring in a minority report.) It is also true that extermination was abandoned largely for moral reasons. Men did for a time grow more civilized—there was an improvement. The relapse from these standards has come in the 20th century. It would be comforting to believe that the relapse was only a temporary one.

There are, of course, cogent moral and humane objections to disarmament by extermination. But for those to whom this is too high a ground other arguments against this type of policy may be adduced. In the first place, before it can succeed there is the small matter of winning the war and, as a rule, of overcoming a resistance only made the more desperate by the knowledge of what is in store for the defeated. Then, too, there is the fact that extermination, like all other barbarities from dum-dum bullets to the bombing of open cities, inevitably becomes reciprocal. When all is said and done, it must be admitted that disarmament by extermination has upon occasion had at least success to recommend it—which is more than can be said for disarmament by imposition.

### Imposition

This second concept of disarmament also springs from fear, but is less ruthless than the first. In this stage the victor nation imposes disarmament upon the vanquished, destroys or annexes his fortifications, and limits the size of his armed

forces. This policy is often pursued when a policy of extermination is impracticable because of the enlightenment of public opinion, or because the prospect of continued resistance makes it undesirable. There can, by the very nature of things, be little hope of this type of disarmament achieving its object. Machiavelli long ago pointed out that a prince in his dealings with his opponents should either forgive them completely, thus hoping to allay their hostility, or else he should destroy them utterly, they and their families and relatives and all who might wish to seek revenge. Any middle course he held to be folly, for to wound a man without wounding him mortally was to run the almost certain risk of future dangers. Thus when Sparta demanded the destruction of the Long Walls of Athens after the Peloponnesian War, it was only a few short years later that she lost in war the leadership of Greece—and Athenian hoplites fought in the ranks of her enemies.

Napoleon at the Convention of Königsberg in 1808 sought to limit the size of the Prussian Army, but the *Krümper* system of Scharnhorst and Gneisenau ensured the failure of his plan, and it is commonly believed—at least upon the Continent—that Blücher had something to do with Waterloo. After 1870 Bismarck annexed Alsace-Lorraine and took the fortress of Metz in addition to imposing what was considered a crippling indemnity upon France. Yet, 44 years later the Germans found a French Army effectively interposed between them and Paris. In that war they did not reach their goal. Success, in fact, only came to them two decades after the Treaty of Versailles at which Germany had been stripped of her armaments, prohibited the use or manufacture of tanks, military aircraft, and poison gas, and had had her army limited to a force totally inadequate to defend her frontiers from either the Poles or the French.

There are three major reasons why a

system of unilateral disarmament imposed by force cannot hope to achieve its object. First, and most important, it is extremely doubtful if such a policy can ever be enforced for any appreciable period of time. The perfect example of this is what happened in Germany after 1918. The disarmament clauses of the Treaty of Versailles were so strict that Winston S. Churchill, who certainly cannot be accused of pro-German sentiments, termed them "astounding." An Allied Commission of Control was established to enforce these terms of the treaty and Allied armies of occupation were quartered in Germany. Yet, the German nation, feeling as it did that the disarmament clauses were unjust, successfully evaded each and every one of them from the very outset.

The *Reichswehr* was to be limited in size to 100,000 men? Then the *Freikorps* would spring fully armed from the ground as Jason's soldiers did and the "Black *Reichswehr*" would defend the Eastern Marches. Germany was to be prohibited military aircraft, tanks, and poison gas? Then the Treaty of Rapallo with the Soviet Union would open the door for the training of German airmen, *Panzer* leaders, and chemical warfare experts on Russian soil. The German General Staff was to be abolished? Then the *Truppenamt* would take its place and officers would be seconded for staff training with foreign armies. Germany was to have no submarines? Then they would be built in Holland and in Spain. German arms production was to be severely limited? Then German industrialists would obtain control of foreign armament plants and *Bofors* would continue what *Krupps* had been forbidden. The western defenses of the *Reich* were to be destroyed and the way to France barred for all time? Then a new doctrine of war would be developed which would find a jagged lightning road to Paris more certain than before.

All this and more the Allies found im-

possible to prevent. And so it must of necessity be, for it is impossible to disarm by force the spirit of man unless you kill him. The French, of all nations, might have recognized this, for had not they felt the same after 1870?

A second factor which dooms disarmament by imposition to failure is the fact that such treaties so greatly exacerbate and perpetuate hostile sentiments in both the victor and the vanquished. The victor, not without cause, fears the revenge of the conquered, while the vanquished, sullen and resentful, bides his time. Fear and hatred are both bad councilors, and they complement each other to an alarming extent. How much of the Prussian saberrattling before 1914, for instance, was mere whistling in the dark—due to the fear, which had its origin in Bismarck himself, of a French war of revenge to regain Alsace-Lorraine and to wipe out the shameful memory of Sedan? Thus what is intended to bring peace actually becomes a major cause of war, and the success of disarmament by imposition is in inverse ratio to the severity of its terms. The last word would seem to lie with Machiavelli, and generosity, if it cannot be an inclination of the heart, should at least be a counsel of prudence.

The third cause of failure, and one which would still operate even if by some miracle the former two could be circumvented, lies in the creation of the unnatural power vacuum which always results from unilateral disarmament. This vacuum will certainly be filled for it is abhorrent to the spirit of world history as its counterpart is to nature.

The vacuum will be filled—either by a division among the victorious allies who created it, or by an entirely new alignment of powers, or by some other means—but filled it must be.

Fortunately, perhaps, men have explored another road in the hope of finding peace. So far we have seen two concepts of dis-

armament, both of which are imposed by the victors upon the vanquished—the one ruthless and complete, and, therefore, in its way successful; the other partial, and, therefore, more malicious than efficacious. The third type of disarmament becomes possible when rival states, both strong, bargain as equals with a view to lessening tension, reducing the danger of war, and utilizing their gross national product to better advantage. This happy turn of events can come about only when statesmen, rising above old rancors and ancient hatreds, declare that no human problem is incapable of solution and that he “who wills the end wills the means.”

### Negotiation

It must in all honesty be confessed that this concept of disarmament has in the past been little more successful than the second type in keeping the great powers from each other's throats. Neither the British endeavor at Cronborg in 1908 to set limits to the naval race with Germany nor the two conferences called by the czar at the Hague in 1899 and 1907 were of any effect whatsoever once a tubercular Serbian student pulled a trigger at Sarajevo—nor in the interregnum between the wars were the Locarno Pact, the Kellogg Pact, or the combined efforts of members of the League of Nations able to hold back Hitler from war. This, however, was because the disarmament talks failed, and there is much to be said for the view that the best hope for peace still lies in the endeavors to make such talks succeed.

There are, however, certain definite prerequisites for success without which any disarmament conference is no more than jockeying for position prior to war. Above all else, there must be a genuine desire for peace on both sides. This desire, in turn, can only exist when neither side has aims which cannot be achieved except by war and when neither side feels that its vital interests are steadily deteriorating



and that this retrogression can be halted only by force of arms. Statesmen are often surprisingly reluctant to recognize that the will to peace does not always exist, and sometimes when the truth does come home to them it is such a shock that they do not respond rationally.

On the morning of 14 July 1870 the French Foreign Minister, Gramont, burst into his Prime Minister's room holding in his hand the copy of the *North German Gazette* which contained Bismarck's version of the Ems telegram. "They wish to force us into war!" he exclaimed with shocked incredulity. They did indeed. Bismarck, Roon, and Moltke had long planned such a war because they felt that Prussia's ambitions could be satisfied in no other way. The failure to recognize this in time contributed substantially to the subsequent French debacle.

The genuine (and not altogether unjustified) German fear of encirclement prior to 1914, the dread of being caught in a strategic pincers between a Russia anxious to extend her control to the Straits and a vengeful France, was certainly not conducive to peace. If Germany were to save herself in so perilous a situation, a speedy victory in the west was essential before the cumbrous Russian mobilization machinery could become effective. This fear of a deteriorating situation was responsible for the Schlieffen Plan, for the violation of Belgian neutrality which, nominally at least, brought Great Britain into the war, and for Moltke the Younger's statement to the Kaiser that once mobilization had begun it was too late to turn back.

#### Atom No Answer

In the dim light of history it would seem too optimistic to believe that the threat of atomic war is likely to achieve what has so far eluded the grasp of statesmen. In the normal course of events men do not commit murder believing that they may be hanged; rather they commit mur-

der hoping that they may escape. Similarly, statesmen in the past have not generally gone to war in the defense of a forlorn hope, preferring death to dishonor. They have gone to war instead upon a calculation—often erroneous—that they could win it. The advent of the hydrogen bomb may well delay a war, but if peace is to rest on so insecure a basis, it is only likely to endure until some General Staff—perhaps erroneously—believes that it has found an answer to the problem of retaliation. If this is so, it is interesting to speculate upon the type of disarmament which might follow a hydrogen war. Peace terms in the past have commonly been stringent enough, and the hatreds raised by even World War I gave rise to demands to "hang the Kaiser." Somewhat wiser counsels prevailed after 1918, but to some defeated generals in 1945 it must have seemed that at the end of every vista there was nothing but the gallows. This mood prevailed at the end of what was essentially a conventional war and at a time when the dreadful significance of the mushroom-shaped cloud was not generally realized.

#### Conclusion

Are we then to take no hope from Geneva, but merely to resign ourselves to an inevitable and unpleasant fate? Perhaps there is no hope left, a hope so ably expressed by General Hans von Seeckt in 1929. He said:

*The risk of war lies essentially in the inequality of military forces which leads the stronger power to secure its political interest by the threat or the exercise of violence against the weaker. A guarantee of peace, therefore, lies less in the reduction of armaments than in the observance of agreed proportions. An effort toward this end must not be too ambitious. The real, effective military force of a country lies in the size of its population and in its wealth, and these forces are not susceptible of limitation. It is, however, feasible*



*to bring the available peace strength of one army into such a relation with the peace strength of another that no state has a force at its disposal which is superior to the combined forces of several other states. Such an adjustment would enhance the general feeling of security, just as the increase of security by treaty favors in turn the reduction of armaments.*

Such a view is, perhaps, a long way from the one world of the idealist, but it has at least this dual appeal to the student of history—it is not a solution which has been tried in the past and failed, but rather a solution which has been tried for limited periods with success. When disarmament talks freely entered into among equals have managed to adjust the proportions of military force, peace has indeed ensued. The balance of power which resulted from the Congress of Europe after the Napoleonic Wars, although it may have accentuated certain reactionary tendencies deplorable to a liberal, nevertheless kept the peace for

40 years. It is possible that if the forces of the Dual Alliance and the Triple Entente had been more equally matched in that fateful summer of 1914—possibly by the definite military alliance of the British with the French—the German General Staff would have counseled Conrad von Hötendorf differently. It should not be forgotten that World War II did not begin until after the signing of the Ribbentrop-Molotov Pact in August 1939 and the consequent destruction of the balance of power in Europe.

Thus for the time being, at least, it would appear that the best hope of escaping universal darkness lies in a just regulation of the size and power of military forces. There is in this approach the further hope—finding indeed no justification in history but springing, nevertheless, from the very desire of man to survive—that a prolonged period of peace might acclimatize nations to so unusual a condition and that mankind, who has in the past suffered so much from the soldier, might yet find through his proper employment the assurance of a better future.

## What Can the Study of the Art of War Teach Us?

Translated and digested by the MILITARY REVIEW from an article by  
Ebbe Gyllenstierna in "Ny Militär Tidskrift" (Sweden) No. 2-3 1956.

DURING the last war an officer who was to direct the training of persons from all levels of society was expected to possess a relatively good general education. Should there not, also, be included in this a certain degree of knowledge concerning previous developments in his own field of activity which, because of their connection with the developments of society on the whole, merit attention even outside the circles of the professional military? Our young officers' knowledge concerning the wars Sweden has been involved in and the history of Sweden's art of war is fairly deficient at the present time. This is true

because military history has been forced more and more to give way to social and economic history in the curricula of the schools.

Those who believe that the study of the art of war is of only little value—and we find many such persons—often give as their reason that the warfare of the future will be so revolutionized by the developments of technique that all our knowledge concerning the art of war in the past will be an unnecessary encumbrance on the minds of professional military men.

It cannot be denied, however, that in all wars, regardless of whether or not the

combatants' combat means are technically highly developed, there have always been found basic rules that have been decisive for victory or defeat. Surprise, speed, and the concentration of forces, for example, have always been of basic importance when it was a matter of achieving success, whether the battle was conducted with showers of arrows or bursts of fire from modern automatic weapons, or whether the break through the enemy's ranks was accomplished with elephants or tanks.

Knowledge of the role of psychological and moral factors in military history must be based on historical studies. One must beware of believing that the influence of these factors will be reduced along with technical developments. On the contrary, it may be safely said that if atomic weapons come to be used, these factors will play a greater role than ever before.

### Training Exercises

We prepare ourselves for war by means of peacetime exercises, but such exercises can never be made so realistic as to give a true picture of the psychic strain under which both command and troops labor in actual war. Such a picture can be gained only from war sources. For example, when the Finns, during their winter war against the Soviets in 1939-40, were to conduct their first counteroffensive on the Karelian Isthmus, the prospects for success seemed very good. The Soviets' attack on the Finns' main defense positions had been repulsed. The will to fight of the Finnish troops appeared to be unbroken. The attack had been minutely planned in accordance with the applicable instructions and regulations. If it had been a peacetime maneuver, one would probably have judged that the attack would be successful. However, to the surprise of the Finns, it was a complete failure. This stemmed from numerous causes. One of these was that the formulation of the order and other preparations, due to lack

of practice and the psychologically and physically difficult circumstances, took so much time in the various staffs that there was not much time left for the troops to make the necessary preparations before the attack.

By a study of battles where the commander's boldness or lack of decision makes it possible or impossible for him to sweep the forces along with him, we obtain a picture of a skillful troop commander. During the years before World War II students at the War College studied a number of battles from World War I with what was considered good results. The commander in these actions, who vividly described them in a little book, *The Infantry Attacks*, was a little-known lieutenant colonel by the name of Erwin Rommel.

Equally important as studying the characteristics of the commander is the desirability of gaining an idea of how various battle-experienced and nonbattle-experienced troops react during combat, and how the attitude of the people toward war has changed from time to time. It is highly enlightening to study how the Finnish forces reacted to their very first encounter with the enemy during the winter war of 1939-40, the panic which ensued in many cases at the first meeting with Soviet tanks, and how the command succeeded in mastering this situation.

### Selectivity

There is, however, much else worthy of study beside the significance of moral and psychological factors in war. The study material is so rich that the greatest danger for an instructor in military history is to attempt to cover too broad a field in his instruction. It would appear much better to seek to cover thoroughly a limited number of events than to give the students a superficial picture of the greatest possible number of occurrences.

There are some who are of the opposite view who possess the naive belief that if

they merely study a sufficiently large number of different battles they will, in war, be able to foresee what an adversary will do or how a battle will develop, so that they will be able in each case to act in the most appropriate manner. Others, again, are of the opinion that the primary task is to find as many similarities as possible in various battles or wars, in order to be able to deduce from them a number of universal "recipes for victory" applicable in the future. It can certainly be profitable to study parallels in historical events, but this only on the condition that one at the same time notes the great differences which always become apparent on closer examination. History never repeats itself in the same way. One can never—with the exception of such basic principles as are found in our regulations—deduce any general "recipes for victory."

In view of history's never-ending variations, it would likely not be worthwhile to attempt to instill a number of fixed solutions in the hope that one of them will fit. However, through the analysis of the historical course of events, the ability to reflect and to understand the relationship between cause and effect should be increased. One will be more easily able to discern which problems usually arise in different types of activity in war and peace, and from what angles these are best attacked, for although the problems of aims and means change, necessitating different solutions, the shaping of these problems is usually quite similar.

If the study of military history is to be of any great value for professional military men who are striving to prepare themselves for war, it must not be aimed primarily at the history of war—crammed with a mass of data and details relative to the course of operations—but at the history of the *art of war* which will show how and why the art of war has changed from era to era.

Some people are of the opinion that in-

struction in military history should be limited to the elucidation of the connections between tactics and technique. Some point out the danger which results from falling behind in developments and the fact that success in war often comes to the side which, without breaking with the basic rules of tactics, has been able to make use of a new weapon or new tactics. Others consider that instruction should not be limited to the interplay between tactics and technique, but that military history—in any case in an advanced military school—should be an auxiliary subject for both strategy and tactics and that the instructor in history, in close contact with the last-named subjects, should take up and elucidate in the light of history the problems of the day as they fit into the framework of total war.

As a background for a study of Sweden's present strategic aim, it could, for example, be fitting to show how and why this aim, at various times, has alternated from peripheral to central defense in accordance with changes in our policy on defense and our military resources. Before the task of determining how our armed forces should be grouped to best defend our long frontiers and coasts is presented, the following questions may be studied: Which factors were of special import when it was necessary to divide the Finnish forces north and south of Lake Ladoga during Finland's war with the Soviet Union in 1939-40? Were the proper conclusions reached? Problems which, experience shows, habitually arise in cases of collaboration between forces of different nationalities or degrees of mobility, as in World War II, are further examples of study subjects. The experiences of aviation during World War II and the Korean conflict, and the capabilities of the party of inferior airpower for carrying on ground operations, should be dealt with at our Army's War Academy.

It seems that it is now generally be-

lieved that the developments of technique have made it necessary that land warfare of the future will be characterized by mobile operations conducted by a large number of formations over a vast area. As a result of this assumption, it is not the stiff art of war of fixed form which the Americans and British, with the exception of Patton, often displayed—for example, during the fighting in Italy or on the Western Front during the final phase of the war—that should claim the greatest interest. Neither should the well-prepared major attacks on fortified positions which took place, for example, at El Alamein and in the invasion in Normandy in 1944, or in the breakthrough of the German Baranow bridgehead on the Vistula in 1945 govern future thinking. The advent of the atomic weapon has made it likely that one will no longer risk or, depending on whether or not the atomic weapon comes to be used, need to carry out any major attack or invasion operation with attack columns, masses of artillery, or invasion vessels closely concentrated on a narrow front.

At the end of World War I the rigid form of trench warfare was broken by new methods of procedure (for instance, the use of British tanks at Cambrai in November 1917) as a clear omen of a new form of the art of war. It was after a careful analysis of the tactics during the final years of World War I that the German armored general, Guderian, proposed to Hitler that he organize an armored arm and put into practice the armored technique that the Germans afterward so successfully employed during 1939-41. Also, de Gaulle in France, and Fuller, and to some degree Liddell Hart and Churchill in England after a study of World War I arrived at the same conclusions as Guderian. These men, however, were unable to overcome the conservative thinking political and military circles in their countries.

Also, at the close of World War II, clear tendencies were manifested toward increased mobility in warfare. This is particularly evident in the Soviet methods, the deeply penetrating infiltration operations which the Chinese inherited and developed to a masterful point in Korea, and the Soviet armored arm's changeover to assault tactics which recall those of the Germans during the first year of the war. It is this type of art of war, adapted by the Germans at the beginning, and by the Soviets at the end of World War II—infiltration operations, partisan and fifth-column activity, *coups de main*, speedy armored thrusts, and airborne operations far into the interior of the enemy's territory—which cannot be erased from memory and which now, perhaps, should be especially studied.

### Conclusion

The study of military history should not be conducted solely by the War Academy. Such study should be included as a branch in the command training which takes place in our regiments. One of the principal aims of this training must be to teach our commanders to act independently and arrive at judgments and conclusions in changing situations. It can be interesting and instructive to study the situations which arise in actual cases. The American military historian S. L. A. Marshall's book, *Bastogne, the First Eight Days*, could be used in this study. After the fighting for Bastogne in December 1944, Marshall interviewed the American commanders on the field of battle while their impressions still were quite fresh. After the war he sought out and questioned the German commanders involved in the action. In this was he was able to make an account of the opposing commanders' judgments and conclusions during the fighting for Bastogne day by day. Since this fighting took place, in part, in covered terrain with elevations and valleys of the Norwegian type and was fought

between combat groups of a strength which approximates that of our Swedish infantry and armored brigades, they are well suited for study. S. L. A. Marshall has also written another book, *The River and the Gauntlet*, which describes the Chinese infiltration tactics in Korea.

It is natural that in our world, dominated as it is by technique, one should have attempted to find strictly technical methods for being able to predict future developments more accurately in different fields. A branch of science which is asserted to be, but hardly is, new is the so-called operations analysis. By the aid of mathematical analysis some believe that one can best find the solution when, for example, one is faced with the task of shaping the most effective defense organization or a new form of strategy or tactics. They believe that operations analysis is able to take the place of intuitive thinking based on historical experience. The truth is that the mathematicians will be just as unable as the historians to come up with any definite prophecies, for the former have the same difficulties as the latter because of the endless variations of the events under consideration. Each mathematical analysis holds good only under certain, definite conditions. If a single factor is altered, if the enemy, for example, makes use of other weapons or makes his appearance in a different manner than one has counted on, the entire analysis must be redone. The mathematical machines cannot take account of psychological factors, such as the commander's strength of will, nor the discipline and combat morale of the troops. The mathematicians are faced with the same temptation as the historians of generalizing and schematizing entirely too much. They cannot analyze all conceivable situations. The mathematicians and historians should not be mutual enemies, but each of them by their work should seek to complement the other. By mathematical analyses

one can, for example, learn that in coast defense it is best to group all available tanks near the beach so that one can employ them quickly against an enemy who is effecting a landing. The maximum employment from the outset of all available weapons not only produces greater fire effect—this can be understood without any analysis—but a considerably greater effect than if engaged bit by bit.

The historian, for his part, finds in a study of the Normandy invasion of 1944 that the German beach defense collapsed at several places in spite of very small losses. The morale of the German troops was none too good. The cause for this was that the beach defense did not get prompt help from the armored formations assembled as reserves back from the coast. One felt himself abandoned and gave up. Willingness to fight in the case of forces grouped for defense can be increased if it is known definitely that reserves are able to intervene promptly in their support.

The mathematician and the historian have by different routes and independently of one another, come to the conclusion which indicates that it may be advantageous to group tactical reserves well forward. The historian can be of help to the mathematician when it comes to stating special problems for which one should seek a solution.

The staff officer's task is, in short, to attempt to be a prophet, to foresee, judge, and plan. He must consider and seek to understand how strategy and tactics must be continually adapted to the developments of technique. He must plan the war matériel today that will be ready for use in 5 to 10 years' time. But whatever technical evolution leads us to and whatever refined forms of mathematics may be discovered, the ability to understand, synthesize, and prove, gained by historical analysis, will be of good assistance in long-range defense planning, which is now more difficult and important than ever before.



# BOOKS OF INTEREST TO THE MILITARY READER

**DOCTOR AT DIENBIENPHU.** By Paul Grauwlin. 304 Pages. The John Day Co., New York. \$4.50.

By LT COL HENRY S. PARKER, MC

This is an excellent narrative of the tragic last days of the French stronghold at Dienbienphu as seen through the eyes of the senior surgeon of the ill-fated garrison. As the Communists slowly close in, the world of Major Grauwlin likewise shrinks, until it is bounded entirely by the damp, bloody, and fetid walls of his underground "hospital." Then his only contact with the rest of the garrison is by runner or through the wounded who are brought to his bunker. For this reason the book is much less a report of combat operations than a study of men under tremendous stress.

Regardless of the ultimate military evaluation of this remarkable siege, one cannot fail to be warmed by the individual qualities of the soldiers of the fortress, whether Norman, Moroccan, German Legionnaire, or Vietnamese, as they are revealed in this hopeless situation. From the medical service standpoint, the latter situation of Major Grauwlin takes on the character of a nightmare. No evacuation from the besieged position, little resupply, and replacements being dropped by parachute daily soon add to the numbers of wounded.

The book is recommended to the military man, and to the officers of the medical service in particular.

**CONFUCIUS. His Life and Time.** By Liu Wu-Chi. 189 Pages. The Philosophical Library, Inc., New York. \$3.75.

By LT COL HAROLD E. BEATY, CE

Twenty-five centuries ago a simple man named K'ung Ch'iu, commonly known as Confucius, was born in China. His wisdom and teachings have influenced the lives of countless millions of people and still have a predominant influence upon the oriental people of today. The book relates in a simple literary style the life and time of Confucius during his life span of 73 years and successfully humanizes this exalted, saintly figure.

It is the general misconception of Western peoples that Confucius was a founder of a religion, which he decidedly was not. Actually, he was a great teacher who led the younger generation and eventually all Chinese peoples toward a truer way of living. This man's chief aim was to teach men to live wisely, virtuously, and in harmony. Based upon available authentic data and his personal knowledge of the Confucian classics in the original, the author has succeeded in presenting an excellent picture of Confucius, his relations with his students, his educational theories and practices, as well as his ethical and political teachings.

Those who are interested in the culture and philosophy of the Chinese people will find this book an invaluable aid in further understanding their national characteristics.



**YOU AND THE ATOM.** By Gerald Wendt. 96 Pages. William Morrow & Co., New York. \$1.95.

By MAJ FREDERICK A. SMITH, JR., *Inf*

*You and the Atom* is a short book about atomic energy that has been written to give the average individual an understanding of the peaceful uses of the atom. It differs from most books on the subject in that it does not discuss the military uses. Its contents are timely and well worth the attention of all since the peaceful uses of the atom promise to revolutionize our lives.

Dr. Wendt knows his subject and writes in a clear and informal style. Radioactivity, fission, reactors, and other nuclear terms are made easy to understand. The book does not pretend to be exhaustive in scope and fulfills its publishers' claim that it is a "book that can be read and understood in less than 2 hours."

**OKINAWA: Victory in the Pacific.** By Major Charles S. Nichols, Jr., United States Marine Corps and Henry I. Shaw, Jr. 332 Pages. Superintendent of Documents, United States Government Printing Office, Washington, D. C. \$5.50.

By COL DANIEL C. POLLOCK, *USMC*

One of the most outstanding developments of World War II in the field of joint undertakings was the perfection of the amphibious operation. The campaign on Okinawa, Operation *Iceberg*, was the culmination of that development in the Pacific. The story of this campaign is told here. The text is handsomely bound and profusely illustrated with maps and photographs.

This is an excellent report of a bitter struggle. It gives the military student and the casual reader an accurate and detailed account of the operations in which the Marines participated. Army activities are covered in sufficient detail to reflect the Marines' contribution to the over-all mission since Marine units formed a major component of the Tenth Army.

**STRATEGIC INTELLIGENCE AND NATIONAL DECISIONS.** By Roger Hilsman. 183 Pages. The Free Press, Glencoe, Ill. \$4.00.

By MAJ JOHN H. CUSHMAN, *Inf*

This is a thorough appraisal of a major problem of any national government—how to get accurate information on the outside world into the right places in the government so that its influence can be properly felt in decision processes.

The dates 7 December 1941 and 25 June 1950, to the public mind, typify occasions when strategic intelligence has failed in its warning and estimating function. Less spectacular but, perhaps, equal damage to the Nation can result if week-to-week policy and operational decisions are made without sure knowledge in the hands of those who decide.

The author has interviewed many people, from the working level up, in the Central Intelligence Agency and the State Department, and he lucidly sets forth the results of his investigations. He develops the current and well-rooted attitude reflected in this field and in the military intelligence: intelligence people do not make policy or recommend decisions; their job is to present the situation.

The author presents compelling arguments to support his disagreement with this view and his case that "the information assembling role and the estimating and forecasting role (are) inseparable from the problem-analyzing, policy-recommending role." His points are worth reading.

**THE BOLSHEVIK REVOLUTION 1917-1923.** Volume 3. By Edward Hallett Carr. 614 Pages. The Macmillan Co., New York. \$6.00.

**THE WORLD'S WARSHIPS.** By Raymond V. B. Blackman. 250 Pages. Hanover House, Garden City, New York. \$3.50.

**AIRCRAFT GAS TURBINES.** By C. W. Smith. 448 Pages. John Wiley & Sons, Inc., New York. \$8.75.

**RED SHADOW OVER MALAYA.** By Brigadier M. C. A. Henniker. 302 Pages. William Blackwood & Sons, Ltd., London, England. \$2.52.

By COL J. C. WINCHESTER, *British Army*

This is a lively, obviously informed, and well-written account of the continuing war against the Communist guerrillas in Malaya. Brigadier Henniker, who commanded a mixed brigade of British, Gurkha, and Fijian troops in Malaya for 3 years, gives an excellent general description of the problems that still confront the civil government, the military command, and the police.

As the foreword to this book by Field Marshal Sir John Harding points out, the story illustrates the wide variety of tasks which the troops in Malaya today are called upon to perform. The high quality of leaders that is necessary, and the intricate and close consultation that is essential to coordinate effectively the operations of all the forces of law and order against the guerrillas are points which are also covered.

*Red Shadow Over Malaya* contains some entertaining anecdotes and is of interest to the military student of jungle and guerrilla warfare fought under "cold war" conditions. The information it contains may well be of great value in other future operations of a similar nature in Southeast Asia.

**SECRETS OF SPACE FLIGHT.** By Lloyd Mallan. 144 Pages. Arco Publishing Co., Inc., New York. \$2.00.

By MAJ JOHN N. HIGHLEY, *USAF*

The purpose of this book is to present information in a manner that the layman can understand without having any great scientific background in the subject area. It is a picture story of the past, present, and future of man's progress toward the last frontier, space. There are a variety of photos, almost all of them exclusive, collected by the author during an 18,000-

mile trip to the research centers, military test centers, and aircraft industrial plants that are involved in work directed toward space travel.

The subject of rockets and space flight has been very completely covered by pictures showing the struggles, achievements, and future probabilities of man's move toward outer space.

Because it is a Do-It-Yourself book, all readers will enjoy reading it and gain considerable knowledge in doing so; because it is based on actual experience and shows factual items, the space flight hobbyist will enjoy it as a good summary of what has been done and a good forecast of what will be done in the near future.

**WAR: LOCOMOTIVE OF HISTORY.** By Richard L-G Deverall. 584 Pages. Distributed in the United States by the author at 163 Meadow Street, Garden City, New York. \$4.00.

By LT COL MITCHEL GOLDENTHAL, *CE*

This is purportedly the first book in English which presents a complete and comprehensive review of the war ideology of world communism.

The essential core of Communist class ideology is outlined in the first few chapters. The development of the ideology of war and the linking of colonial and national movements to this war ideology are covered in the middle section. Communist application of the war ideology to world events, with particular reference to Asia, is contained in the remainder.

Stark vividness highlights this shockingly accurate work. Military readers will find it a very interesting account of the continuing effects and tremendously far-reaching consequences of war as the locomotive of history.

The work not only exposes the phony Communist "peace movement" but also warns that communism is peddling "peaceful coexistence" as a prelude to new civil wars in Asia to expand communism.

**IRREGULAR PARTISANS, GUERRILLAS.** Edited by Irwin R. Blacker. 487 Pages. Simon & Schuster Co., New York. \$5.00.

BY MAJ JOHN J. EARLEY, *Inf*

This book is a collection of 32 individual accounts of various guerrilla actions ranging from Morgan's march on Panama to the Haganah at Athlit. Guerrilla warfare is as old as man's instinct for survival and there is little doubt that it will play an important role in the event of another war. The methods may change but the aim will always be the same as the author points out. This is an easy-to-read, worthwhile book for the military man.

**PSYCHOLOGICAL WARFARE** (Second Edition). By Paul M. A. Linebarger. 318 Pages. Combat Forces Press, Washington, D. C. \$6.00.

BY LT COL C. A. CHRISTIN, JR., *Arty*

This expanded second edition of a book which has served as the key text for use by students of psychological warfare for the past decade contains advances in the art as a result of the Korean conflict and World War II. The author tells what psychological warfare is, what it does, how it is fought, and who fights it. This book is sure to remain the paramount text in this field and should prove of value to the military man whether he is engaged primarily in this field or not.

**PROBLEMS OF LAW IN JOURNALISM.** By William F. Swindler. 551 Pages. The Macmillan Co., New York. \$5.75.

BY MAJ LINO BONUCCI, *QMC*

This book presents an excellent picture of the efforts of the press to win its place in American law. The author shows the development and changes in the attitude of the courts toward the press first by explanatory material and then by the presentation of actual court cases. This is excellent reading and study material for one interested in this phase of journalism.

**THE WEHRMACHT IN ACTION.** Nine Volumes. Edited by Colonel Hermann Teske, German Army, Retired. Kurt Vowinkel Verlag, Heidelberg, Germany.

BY LT COL W. C. MAGATHAN, JR., *Arty*

This series of books, published in the German language, has the purpose of preserving and digesting the available experiences of the German land, sea, and air services in World War II. Other volumes are planned over the years with a new volume to appear every 3 months. Available combat records of the German units involved have been used, including maps, orders, intelligence reports, journals, opinions of participants still living, and pertinent memoirs.

Of particular importance to the student of military science is that these campaigns are seen through the eyes of the commanders presenting their reflections, manner of coping with accidents and crises, and expedients employed—in short, the "fog of war." Lessons learned are cited with candor. In addition to presenting new and valuable historical material, the style of writing is unusually clear and concise.

**EUROPEAN AND COMPARATIVE GOVERNMENT.** By Robert G. Neumann. 818 Pages. McGraw-Hill Book Co., Inc., New York. \$6.50.

**WE REMAINED.** By Colonel R. W. Volckmann, United States Army. 244 Pages. W. W. Norton & Co., Inc., New York. \$3.75.

**SPIES AT WORK.** A History of Espionage. By Ronald Seth. 234 Pages. The Philosophical Library, Inc., New York. \$4.75.

**THE MEDICAL DEPARTMENT HOSPITALIZATION AND EVACUATION, ZONE OF INTERIOR.** United States Army in World War II. By Clarence McK. Smith. 503 Pages. Superintendent of Documents, United States Government Printing Office, Washington, D. C. \$4.00.

**MILITARY JUSTICE IN THE ARMED FORCES OF THE UNITED STATES.** By Robinson O. Everett. 338 Pages. The Military Service Publishing Co., Harrisburg, Pa. \$5.00.

BY LT DAVID B. DOWNING, *JAGC*

Recently the United States Supreme Court in *Toth* versus *Quarles* struck down as unconstitutional the attempt by Congress to extend military jurisdiction to include separated servicemen charged with having committed offenses while on active duty. This was considered by many to be another example of the well-entrenched distrust by the civilian bench and bar of the military system of justice. There is no doubt that distrust exists. Few senior members of the civilian bar have had experience with the Uniform Code of Military Justice which was enacted by Congress in May 1950. It is this code and its operation that Mr. Everett outlines and analyzes.

Mr. Everett's concluding observation is that "Although there are a few rough spots, it does seem that military justice now is being administered better than ever before. Today, it can even offer some lessons to the civil courts, a circumstance which has already been recognized by many judges and attorneys. In short, military justice has come of age!" This book is scholarly, yet highly readable, a duality too infrequently achieved.

**CONGRESS. Its Contemporary Role. Second Revised Edition.** By Ernest S. Griffith. 207 Pages. New York University Press, New York. \$3.50.

BY LT COL ALLAN W. MITCHELL, *Arty*

Dr. Griffith presents an interesting analysis of Congress as it actually works today in its relationship with the other branches of the Government. At a time when it is popular to describe our Congressmen as comic opera buffoons, it is heartening to discover from an expert that in reality they apply themselves

competently and zealously to their legislative tasks.

The author relates the manner in which Congress faces its three sternest challenges: world communism, the power of selfish interests, and the threat that our growing bureaucracy in this technical age "may transform an ostensible democratic government into a dictatorship of civil service."

An interesting facet of the legislative scene is the recent development of a phenomenon called "government by whirlpools." Here we see legislation and policy created by various interests—Congressmen, committee members, lobbyists, research authorities, civil servants, executive representatives, news correspondents, and even private individuals—all focusing on a specific problem or area. Thoughts and ideas are exchanged among the various personnel, either formally by conferences or investigations, for example, or informally in luncheon dates and cocktail parties. From these relatively small but diverse groupings emerge programs, strategy, and policy.

**200 MILES UP. The Conquest of the Upper Air. Second Edition.** By J. Gordon Vaeth. 261 Pages. The Ronald Press Co., New York. \$5.00.

BY COL RONALD R. WALKER, *USAF*

This book contains timely information, not only because of the interest of the International Geographical Year which takes place between July 1957 and December 1958, but because of the continued mandatory interest of the Nation in the development of the guided missile program of the military services.

Mr. Vaeth is a scientist, but writes the story in terms that can be understood by the layman. It is a technical publication, however, without any attempt to throw in any Buck Rogers human interest, such as in the nature of the "furry little men on Mars." It is a worthwhile book for both the civilian and the military man.

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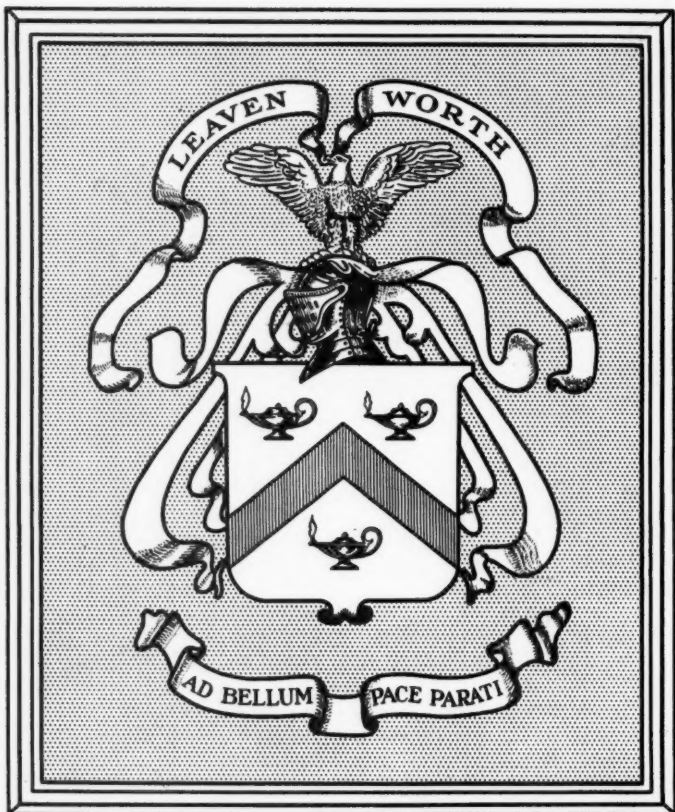
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